

AD-A070 764

DEFENSE INTELLIGENCE AGENCY WASHINGTON DC
BIBLIOGRAPHY OF SOVIET LASER DEVELOPMENTS. NUMBER 30. JULY-AUGU--ETC(U)
SEP 78

F/G 20/5

UNCLASSIFIED

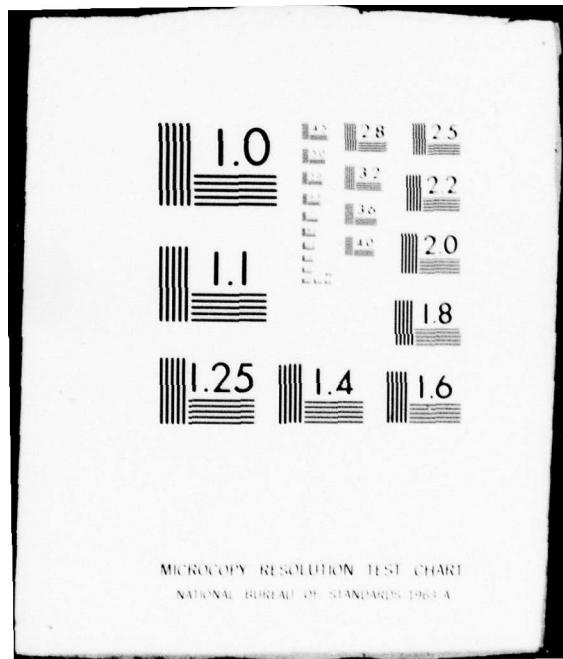
DIA-DST-1740Z-004-78

NL

| OF |
AD
A070764



END
DATE
FILMED
8-79
DOC



DA070764

DIA

LEVEL ^{IV}

AD70763

DST-17402-004-78



**BIBLIOGRAPHY OF SOVIET
LASER DEVELOPMENTS (U)**
JULY - AUGUST 1977

SEPTEMBER 1978

This document has been approved
for public release and sale; its
distribution is unlimited.

79-07 00025

14

DIA-DST-17482-524-78

6

BIBLIOGRAPHY OF SOVIET LASER DEVELOPMENTS

Number 30.

JULY - AUGUST 1977

12

80 p.

Date of Report

August 7, 1978

DDC
REF ID: A65417
JUL 3 1979
REFUGEE C

11

Sep 78

Vice Director for Production
Defense Intelligence Agency

This document was prepared for the Defense Intelligence Agency under an intragovernment agreement. It is intended to facilitate access of government researchers to Soviet laser literature.

Comments should be addressed to the Defense Intelligence Agency, Directorate for Scientific and Technical Intelligence, ATTN: DT-1A

Approved for public release; distribution unlimited

107 300

elt

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) BIBLIOGRAPHY OF SOVIET LASER DEVELOPMENTS, No. 30 JULY - AUGUST 1977		5. TYPE OF REPORT & PERIOD COVERED
7. AUTHOR(s)		6. PERFORMING ORG. REPORT NUMBER
9. PERFORMING ORGANIZATION NAME AND ADDRESS		8. CONTRACT OR GRANT NUMBER(s)
11. CONTROLLING OFFICE NAME AND ADDRESS Defense Intelligence Agency Directorate for Scientific and Technical Intelligence, ATTN: DT-1A		12. REPORT DATE August 7, 1978
14. MONITORING AGENCY NAME & ADDRESS(if different from Controlling Office)		13. NUMBER OF PAGES 73
		15. SECURITY CLASS. (of this report) UNCLASSIFIED
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited		
17. Distribution Statement (of the abstract entered in Block 20, if different from report)		
18. Supplementary Notes		
19. KEY WORDS Solid State Lasers, Liquid Lasers, Gas Lasers, Chemical Lasers, Laser Components, Nonlinear Optics, Spectroscopy of Laser Materials, Ultrashort Pulse Generation, Gamma Lasers, Laser Theory, Laser Biological Effects, Laser Communications, Laser Beam Propagation, Laser Computer Technology, Holography, Laser Chemical Effects, Laser Parameters, Laser Measurement Applications, Laser-Excited Optical Effects, Laser Beam-Target Interaction, Laser Plasma		
20. ABSTRACT This is the Soviet Laser Bibliography for July-August 1977 and is No. 30 in a continuing series on Soviet laser developments. The coverage includes basic research on solid state, liquid, gas, and chemical lasers; components; nonlinear optics; spectroscopy of laser materials; ultrashort pulse generation; theoretical aspects of advanced lasers; and general laser theory. Laser applications are listed under biological effects; communications; beam propagation; computer technology; holography; laser-induced chemical reactions; measurement of laser parameters; laser measurement applications; laser-excited optical effects; beam-target interaction; and plasma generation and diagnostics.		

Introduction

This bibliography has been compiled under an interagency agreement as a continuing effort to document current Soviet-bloc developments in the quantum electronics field. The period covered is July-August 1977, and includes all significant laser-related articles received by us in that interval. The bulk of the entries come from the approximately 30 periodicals which are known to publish the most significant findings in Soviet laser technology. Citations from the Russian Reference Journals are excluded, as well as entries from the CIRC data base not otherwise covered. Laser items from the popular or semipopular press are generally omitted.

For convenience we have abbreviated frequently cited source names; a source abbreviations list and an author index are included. All sources cited with no parenthetical notation are available at the Library of Congress. A parenthetical entry (RZh, KL), indicates the secondary source in which the citation was found as a bibliographic entry or abstract, but for which the original source is not currently available at the Library. The authors' affiliations are indicated by the numbers in parentheses following the authors' names in the text and are listed in the Author Affiliations List. New affiliations are assigned a new number and are added to a cumulative list which includes all affiliations from 1969 to the present. Only those affiliations which appear in this issue are listed in this issue's Author Affiliations List.

Accession For	
NTIS	GRA&I
DDC TAB	<input checked="" type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification _____	
By _____	
Distribution/ _____	
Availability Codes	
Distr	Avail and/or special
A	

SOVIET LASER BIBLIOGRAPHY, JULY - AUGUST 1977

TABLE OF CONTENTS

I. BASIC RESEARCH

A. Solid State Lasers

1. Crystal: Ruby	1
2. Crystal: Rare-Earth Activated	2
3. Crystal: Miscellaneous	2
4. Semiconductor: Simple Junction	
a. GaAs	2
b. CdS	3
5. Semiconductor: Mixed Junction	3
6. Semiconductor: Heterojunction	3
7. Semiconductor: Theory	4
8. Glass: Nd	4
9. Glass: Yb-Er	5

B. Liquid Lasers

1. Organic Dyes	
a. Rhodamine	5
b. Polymethine	6
c. Coumarin	6
d. Miscellaneous Dyes	6

C. Gas Lasers

1. Simple Mixtures	
a. He-Ne	7
b. Ca-H ₂	8
2. Molecular Beam and Ion	
a. CO ₂	8
b. CO	9
c. Kr	10
d. H ₂	10
e. N ₂ O	10
f. NH ₃	10
g. Submillimeter	11
h. Metal Vapor	11
i. Gasdynamic	12
j. Miscellaneous Molecular	13

3. Excimer	13
4. Theory	13
D. Chemical Lasers	
1. $\text{CS}_2 + \text{O}_2$	14
2. Miscellaneous	14
E. Components	
1. Resonators	14
2. Pump Sources	15
3. Collimators	17
4. Diffraction Lattices	17
5. Filters	18
6. Mirrors	18
7. Detectors	18
8. Modulators	19
F. Nonlinear Optics	
1. Frequency Conversion	20
2. Parametric Processes	22
3. Stimulated Scattering	
a. Raman	22
b. Rayleigh	24
c. Miscellaneous Scattering	24
4. Self-focusing	25
5. Acoustic Interaction	25
6. General Theory	25
G. Spectroscopy of Laser Materials	
H. Ultrashort Pulse Generation	
J. Theoretical Aspects of Advanced Lasers	
K. General Laser Theory	

II. LASER APPLICATIONS	
A. Biological Effects	28
B. Communications Systems	28
C. Beam Propagation	
1. In the Atmosphere	31
2. In Liquids	33
3. Theory	34
D. Computer Technology	34
E. Holography	34
F. Laser-Induced Chemical Reactions	37
G. Measurement of Laser Parameters	38
H. Laser Measurement Applications	
1. Direct Measurement by Laser	41
2. Laser-Excited Optical Effects	47
J. Beam-Target Interaction	
1. Metal Targets	53
2. Dielectric Targets	54
3. Semiconductor Targets	54
4. Miscellaneous Studies	55
K. Plasma Generation and Diagnostics	56
III. MONOGRAPHS, BOOKS, CONFERENCE PROCEEDINGS	60
IV. SOURCE ABBREVIATIONS	62
V. AUTHOR AFFILIATIONS	65
VI. AUTHOR INDEX	68

I. BASIC RESEARCH

A. SOLID STATE LASERS

1. Crystal: Ruby

1. Dranov, L.N., D.A. Kichigin, V.S. Konevskiy, L.A. Litvinov, and E.A. Chernina (84). Method for monitoring crystals based on electron paramagnetic resonance. Zavodskaya laboratoriya, no. 8, 1977, 952-953.
2. Kasperczuk, A., M. Paduch, L. Pokora, and Z. Wereszczynski (NS). Ruby laser with a special resonator generating nanosecond pulses, with the possibility of shaping their front. BWAT, no. 2, 1977, 159-164. (RZhRadiot, 8/77, 8Yell7)
3. Kovalev, A.A., L.V. Levashkevich, V.A. Pilipovich, Yu.V. Razvin, and B.N. Tyushkevich (0). Generating a train of nanosecond pulses in an electrooptically switched ruby laser. ZhTF P, no. 14, 1977, 665-668.
4. Leontovich, A.M., and A.M. Mozharovskiy (1). Stimulated emission in ruby at low temperatures. IN: Tr 1, 3-40.

2. Crystal: Rare-Earth Activated

5. Bogomolova, G.A., L.A. Bumagina, A.A. Kaminskiy, and B.Z. Malkin (13). Crystal field in laser garnets with TR^{3+} ions in a model of exchange charges. FTT, no. 8, 1977, 1439-1452.
6. Dmitriyev, V.F., and V.K. Novokreshchenov (0). Phase-amplitude characteristics of a YAG:Nd³⁺ laser with intra-resonator second harmonic generation. KE, no. 7, 1977, 1582-1587.

7. Kaminskiy, A.A., A.A. Pavlyuk, T.I. Butayeva, V.A. Fedorov, I.F. Valashov, V.A. Berenberg, and V.V. Lyubchenko (13,77). Study of stimulated emission at additional transitions of Ho³⁺ and Er³⁺ ions in KGd(WO₄)₂ crystals. NM, no. 8, 1977, 1541-1542.

8. Kravtsov, N.V., V.A. Sidorov, and A.M. Susov (2). Axial mode-locking in a solid-state laser with a nonstationary resonator. ZhTF P, no. 13, 1977, 611-614.

9. Voron'ko, Yu.K., and A.A. Sobol' (1). Spectroscopy of activator centers of rare-earth ions in laser crystals with a garnet structure. IN: Tr 1, 41-77.

3. Crystal: Miscellaneous

10. Khizhnyakov, V., and I. Rebane (61). Theory of transition spectra of resonant secondary emission of impurity centers in crystals. IAN Est, no. 3, 1977, 260-280.

4. Semiconductor: Simple Junction

a. GaAs

11. Basov, N.G., V.S. Kargapol'tsev, Ye.P. Malygin, V.K. Malyshev, V.I. Molochev, K.N. Narzullayev, V.V. Nikitin, A.S. Semenov, and O.N. Talenskiy (1). Single-frequency semiconductor GaAs injection laser. KE, no. 8, 1977, 1815-1816.

12. Litvinov, V.F., V.V. Nikitin, A.S. Semenov, A.B. Sergeyev, and V.F. Trukhin (0). Study of a mode-locking regime in a semiconductor laser with an external mirror. IN: Sb 1, 140-144. (RZhRadiot, 8/77, 8Yel50)

13. Logginov, A.S., and V.Ye. Solov'yev (2). Interaction and spectral distribution of transverse modes in GaAs strip lasers. VMU, no. 4, 1977, 32-37.

14. Yeliseyev, P.G., V.N. Lavrov, and Ye.G. Sukhov (0). Lasing characteristics in injection lasers under short pumping pulses. RiE, no. 8, 1977, 1645-1652.

b. CdS

15. Kritskiy, A.V., N.N. Krupa, and G.A. Kupchenko (5). Lasing in CdS single crystals under single-photon excitation. UFZh, no. 7, 1977, 1194-1198.

5. Semiconductor: Mixed Junction

16. Bovina, L.A., N.B. Brandt, A.A. Druzhinin, R.V. Lutsiv, Ya.G. Ponomarev, and V.I. Stafeyev (114,2). Electric properties of inhomogeneous p-n junctions in $Cd_xHg_{1-x}Te$ at high hydrostatic pressures. UFZh, no. 7, 1977, 1211-1215.

6. Semiconductor: Miscellaneous

17. Alferov, Zh.I., V.M. Andreyev, N.V. Klepikova, V.I. Kolyshkin, V.R. Larionov, Ye.L. Portnoy, and G.N. Shelovanova (4). Semiconductor heterojunction laser. Otkr izobr, no. 31, 1977, 521806.

18. Bogatov, A.P., P.G. Yeliseyev, I.M. Tsidulko, and I. Ismailov (215). Temperature dependence of the lasing threshold in an injection laser with an external resonator at a fixed wavelength. FTP, no. 7, 1977, 1392-1394.

19. Ismailov, I., N. Shokhudzhayev, D. Akhmedov, and P.G. Yeliseyev (215,1). The characteristics of $n\text{GaP}_{x\text{As}_{1-x}}-p\text{Ga}_{1-y}\text{Al}_y\text{P}_x\text{As}_{1-x}$ heterolasers in the visible region. KE, no. 8, 1977, 1821-1823.

20. Kiyak, S.G. (303). A heterojunction based on CdSb. UFZh, no. 7, 1977, 1220-1222.

21. Nakwaski, W., and Z. Muszynski (NS). Technology and spectral characteristics of the first Polish heterojunction lasers. Archiwum elektrotechniki, v. 25, no. 2, 1976(1977), 481-487.
(RZhRadiot, 8/77, 8Ye144)

22. Nakwaski, W. (NS). Analysis of temperature rise in single-heterostructure $\text{GaAs}-\text{Ga}_{1-x}\text{Al}_x\text{As}$ laser diodes under transient-state conditions. Electron Technology [Poland], no. 3-4, 1976, 131-161.
(RZhRadiot, 8/77, 8Ye143)

7. Semiconductor: Theory

23. Suslikov, L.M., I.V. Bodnar', and V.Yu. Slivka (136). Reflection spectra of $\text{CuGa}(\text{S}_{x}\text{Se}_{1-x})_2$ single crystals. FTP, no. 8, 1977, 1645-1646.

8. Glass: Nd

24. Borisov, B.M., L.A. Vasil'yev, S.V. Datsykov, N.P. Karnaugh, V.P. Kirsanov, Yu.I. Krushilin, V.N. Lagun, V.K. Orlov, S.V. Troshkin, and V.I. Filippov (0). Disk neodymium glass amplifier. KE, no. 8, 1977, 1810-1811.

25. Guba, B.S., G.V. Obraztsov, D.S. Prilezhayev, and B.M. Sedov (0).
Designing laser amplifiers based on generalized experimental data.
ZhTF, no. 8, 1977, 1750-1755.

26. Rudnitskiy, Yu.P., R.V. Smirnov, V.I. Sokolov, A.V. Tumanov, and N.S. Shkvarina (0). Amplification of high-power laser pulses in neodymium glass. IN: Sb 2, 68-69. (RZhRadiot, 7/77, 7Ye142)

27. Zanadvorov, N.P., A.A. Mak, V.I. Kryzhanovskiy, I.N. Sventitskaya, V.A. Serebryakov, V.R. Startsev, Yu.A. Flegontov, and A.A. Chertkov (0).
Nd:glass laser with a controlled pulse shape. IN: Sb 2, 57-58.
(RZhRadiot, 7/77, 7Ye141)

9. Glass: Yb-Er

28. Gapontsev, V.P., A.A. Izyneyev, V.B. Kravchenko, and Yu.P. Rudnitskiy (0).
1.06-1.54 μ laser converters using ytterbium-erbium glass. IN: Sb 2, 9-10. (RZhRadiot, 7/77, 7Ye143)

B. LIQUID LASERS

1. Organic Dyes

a. Rhodamine

29. Atroshchenko, V.I., V.S. Ivanov, V.I. Infimovskiy, B.V. Kalachev, B.A. Konstantinov, V.S. Prokudin, I.V. Smirnov, V.A. Tatarskiy, B.F. Trinchuk, and A.A. Churin (0). Flashlamp-pumped rhodamine 6G laser. ZhPS, v. 27, no. 2, 1977, 226-230.

b. Polymethine

30. Melishchuk, M.V., and Ye.A. Tikhonov (5). Stimulated emission at phononless electron-vibrational transitions in polymethine dye solutions. UFZh, no. 8, 1977, 1392-1395.

c. Coumarin

31. Mostovnikov, V.A., A.N. Rubinov, S.S. Anufrik, G.R. Ginevich, V.M. Nikitchenko, and G.S. Vodotyka (0). Effect of the molecular structure of coumarin derivatives on the spectral-luminescence and lasing properties of their solutions. ZhPS, v. 27, no. 1, 1977. 59-65.

d. Miscellaneous Dyes

32. Korobov, A.M., V.V. Pozhar, and M.I. Dzyubenko (84). Study of the spectral formation in organic compound lasers pumped by flashlamps. Institut radiofiziki i elektroniki AN UkrSSR. Preprint, no. 79, Khar'kov, 1977, 36 p. (RZhF, 8/77, 8D1239)

33. Pikulik, L.G., and O.I. Yaroshenko (0). Kinetics of lasing in complex organic compound solutions during laser pumping by linearly polarized radiation. ZhPS, v. 27, no. 1, 1977, 53-58.

34. Pikulik, L.G., and O.I. Yaroshenko (0). Polarization patterns for lasers using complex organic compound solutions. ZhPS, v. 27, no. 2, 1977, 231-237.

C. GAS LASERS

1. Simple Mixtures

a. He-Ne

35. Dabrowski, M., K. Maksjan, and W. Trojanowski (NS). He-Ne laser with enhanced power stability. BWAT, no. 2, 1977, 153-158. (RZhRadiot, 8/77, 8Ye64)

36. Lis, L. (NS). Laser transitions at 3071, 5665, and 10353 nm in an He-Ne electric discharge. Acta physica polonica, v. A51, no. 4, 1977, 609-615. (RZhRadiot, 8/77, 8Ye70)

37. Mogil'nitskiy, B.S., and Yu.D. Kolominikov (129). Contrast power resonances in a He-Ne¹²⁷ I₂ laser with a large effective absorption length. KE, no. 7, 1977, 1433-1440.

38. Muller, Ya.N., V.M. Geller, L.I. Lisitsyna, and G.I. Grif (327). UHF-pumped He-Ne laser. KE, no. 8, 1977, 1788.

39. Popov, A.I., Ye.D. Protsenko, and Yu.F. Skachkov (0). Dielectric coating for mirrors of dual-wave lasers, lasing at 0.63 and 3.39 μ . ZhPS, v. 27, no. 1, 1977, 37-41.

40. Tuchin, V.V., and G.S. Knyazevskaya (0). Problem of modulation spectroscopy of levels in a He-Ne laser. OiS, v. 43, no. 2, 1977, 297-305.

b. Ca-H₂

41. Klimkin, V.M., and P.D. Kolbycheva (78). Tunable single-frequency calcium-hydrogen laser at 5.54 μ . KE, no. 8, 1977, 1818-1821.

2. Molecular Beam and Ion

a. CO₂

42. Anan'yev, Yu.A., V.I. Kuprenyuk, V.V. Sergeyev, and V.Ye. Sherstobitov (0). Study of the properties of an unstable resonator with a dihedral corner reflector in a flow-through c-w CO₂ laser. KE, no. 7, 1977, 1456-1460.

43. Avanesyan, V.S., A.I. Dutov, Yu.V. Lakhno, and L.N. Malakhov (0). Electroionization laser with a grid-controlled electron gun. KE, no. 8, 1977, 1827-1829.

44. Basov, N.G., V.A. Boyko, V.A. Danilychev, V.D. Avorykin, A.N. Lobanov, A.F. Suchkov, I.V. Kholin, and A.Yu. Chugunov (1). Dynamics of the emission from an electroionization CO₂ laser with a plasma mirror. KE, no. 8, 1977, 1761-1770.

45. Blinov, N.A., I.A. Leont'yev, V.K. Orlov, and N.V. Cheburkin (0). Electroionization closed-cycle CO₂ laser operating in a pulse repetition regime. KE, no. 8, 1977, 1808-1809.

46. Byszewski, W.W., and E. Makowska (NS). Numerical optimization of a high-pressure CO₂-N₂ laser. Acta physica polonica, v. A50, no. 6, 1976, 831-845. (RZhF, 8/77, 8D1248)

47. Grigor'yants, V.V., B.A. Kuzyakov, and A.M. Sinitsyn (326).
Waveguide CO₂ laser gain. KE, no. 7, 1977, 1482-1487.

48. Ivanchenko, A.I., and A.A. Shepelenko (0). Effect of the renewal rate of the gas on the characteristics of a CO₂ laser. IN: Sb 3, 27-28.
(RZhMekh, 7/77, 7B375)

49. Ivanchenko, A.I., and A.A. Shepelenko (0). Electrical fields in a discharge in CO₂-N₂-He transverse to the gas flow. IN: Sb 3, 196-198. (RZhF, 8/77, 8G376)

50. Karlov, N.V., Yu.B. Konev, I.V. Kochetov, and V.G. Pevgov (0).
Generation of nanosecond pulses in high-pressure CO₂ lasers.
ZhTF P, no. 4, 1977, 170-174. (RZhRadiot, 7/77, 7Ye14)

51. Kulish, N.R., N.A. Kazakova, and A.F. Mazinichenko (6). Stabilization of high-power CO₂ lasers. IN: Sb 4, 68-72.

52. Kuntsevich, B.F., B.I. Stepanov, S.A. Trushin, and V.V. Churakov (3).
Lasing in the 16 μ region during optical excitation of the CO₂ molecule by HF laser radiation. ZhTF P, no. 15, 1977, 759-762.

53. Pinchukov, V.I. (0). Calculating a two-dimensional current of a relaxing mixture of CO₂-N₂-H₂O-He gases. IN: Sb 3, 8-10.
(RZhMekh, 8/77, 8B289)

b. CO

54. Dolinina, V.I. A.F. Suchkov, and B.M. Urin (1). Theoretical investigation of the possibility of generating short high-powered pulses using an electroionizing CO laser. KE, no. 7, 1977, 1571-1572.

55. Konev, Yu.B., I.V. Kochetov, and V.G. Pevgov (118). Effect of the selections of lasing lines on the radiation power of a CO laser.

ZhTF P, no. 15, 1977, 733-736.

56. Napartovich, A.P., I.V. Novobrantsev, and A.N. Starostin (0).

Theory of a steady-state CO laser. ZhPMTF, no. 4, 1977, 21-24.

c. Kr

57. Batishche, S.A., V.S. Burakov, V.I. Gladushchak, V.A. Mostovnikov, P.A. Naumenkov, G.T. Rasdobarin, A.S. Rubanov, A.N. Rubinov, V.V. Semenov, L.V. Tanin, and Ye.Ya. Shreyder (4). Lasing in krypton near the 123.6 nm resonance line. ZhTF P, no. 14, 1977, 674-677.

d. H₂

58. Lozovskiy, P.M., S.P. Chernov, and P.B. Essel'bakh (2). High-power hydrogen laser in the VUV region with a high frequency pulse repetition rate. KE, no. 7, 1977, 1606-1608.

e. N₂O

59. Volchenok, V.I., N.P. Yegorov, V.N. Komarov, S.Ye. Kupriyanov, V.N. Ochkin, and N.N. Sobolev (92,1). Dissociation of N₂O in the gas-discharge plasma of an N₂O laser. KhVE, no. 4, 1977, 361-365.

f. NH₃

60. Vasil'yev, B.I., A.Z. Grasyuk, and A.P. Dyad'kin (1). High-power pulsed NH₃ laser optically pumped by a CO₂ laser. KE, no. 8, 1977, 1805-1807.

g. Submillimeter

61. Dyubko, S.F., L.D. Fesenko, and O.I. Baskakov (34). Study of submillimeter wave gain in optically pumped molecular gas media. KE, no. 7, 1977, 1522-1528.

h. Metal Vapor

62. Batenin, V.M., V.A. Burmakin, P.A. Vokhmin, A.I. Yevtyunin, I.I. Klimovskiy, M.A. Lesnoy, and L.A. Selezneva (74). Time dependence of an electron concentration in a copper vapor laser. KE, no. 7, 1977, 1572-1575.

63. Bokhan, P.A., V.I. Solomonov, and V.B. Sheglov (78). Study of the energy characteristics of an axial discharge copper vapor laser. KE, no. 8, 1977, 1812-1814.

64. Denisov, Yu.V., and N.F. Perevozchikov (118). CuI vapor laser for spectroscopy. IN: Tr 2, 142-146. (RZhF, 8/77, 8D1280)

65. Isayev, A.A., and G.Yu. Lemmerman (1). Study of a pulsed copper vapor laser at elevated powers. KE, no. 7, 1977, 1413-1417.

66. Kozlov, G.I., and S.A. Reshetnyak (17). Calculating the parameters of a lithium vapor plasma-dynamic laser. ZhTF, no. 7, 1977, 1516-1522.

67. Oleynik, Yu.M., and A.V. Rogozhin (0). Relaxation processes in a copper halogenide laser discharge. KE, no. 7, 1977, 1575-1577.

i. Gasdynamic

68. Aleksandrov, B.S., Yu.A. Anan'yev, A.V. Lavrov, and V.P. Trusov (0). Active medium model for calculating resonators of gasdynamic CO₂ lasers. KE, no. 7, 1977, 1461-1466.

69. Andronov, G.A., A.G. Armer, V.A. Belavin, B.M. Dymshits, Ya.P. Koretskiy, and V.F. Sharkov (0). Gasdynamic laser using a CO-Ar mixture. KE, no. 8, 1977, 1799-1801.

70. Biberman, L.M., V.S. Vorob'yev, B.M. Smirnov, and A.Ye. Sheyndlin (74). Method for obtaining laser emission. Otkr izobr, no. 27, 1977, 547167.

71. Golovichev, V.I., and M.D. Taran (0). Possible alternatives for describing the lasing regime in c-w laser systems. IN: Sb 3, 4-7. (RZhMekh, 7/77, 7B373)

72. Gvozdeva, L.G., and Yu.V. Zhilin (0). Experimental study of gasdynamic processes during shock startup in supersonic jet nozzles. ZhPMTF, no. 4, 1977, 66-74.

73. Orayevskiy, A.N., V.P. Pimenov, N.B. Rodionov, and V.A. Shcheglov (1). Gasdynamic laser using a D₂-HCl-He mixture. KE, no. 8, 1977, 1686-1693.

74. Sharkov, V.F., B.M. Dymshits, G.M. Grigor'yan, G.V. Ivanov, Ya.P. Koretskiy, I.V. Kochetov, V.M. Lamonov, and V.G. Pevgov (0). Gasdynamic CO laser with a high energy density. KE, no. 8, 1977, 1824-1826.

75. Vasil'yev, V.M., S.V. Kulikov, and O.V. Skrebkov (0). Calculating a chemically and vibrationally nonequilibrium flow of a multicomponent gas through a jet nozzle. ZhPMTF, no. 4, 1977, 13-21.

3. Miscellaneous Molecular

76. Danilychev, V.A., O.M. Kerimov, and I.B. Kovsh (0). High-pressure molecular gas lasers. IN: Sb 5, 5-253. (RZhRadiot, 8/77, 8Ye77)

3. Excimer

77. Basov, N.G., V.A. Danilychev, V.A. Dolgikh, O.M. Kerimov, V.S. Lebedev, and A.G. Molchanov (1). New excimer bands of radiation in noble gas halides. ZhETF P, v. 26, no. 1, 1977, 20-23.

78. Ishchenko, V.N., V.N. Lisitsyn, and A.M. Razhev (295). Pulsed regime of a KrF excimer laser. ZhTF P, no. 14, 1977, 690-693.

79. Voytik, M.G., A.G. Molchanov, and Yu.M. Popov (1). The kinetics of emitting excimer radiation from inert gases in a sustained electrical discharge. KE, no. 8, 1977, 1722-1731.

4. Theory

80. Basov, N.G., A.N. Brunin, V.A. Danilychev, A.G. Degtyarev, V.A. Dolgikh, and O.M. Kerimov (1). High pressure laser emitting in the UV spectral region using a KrF molecule. KE, no. 7, 1977, 1595-1597.

81. Fominskiy, L.P. (0). Non-selfsustained discharge with recuperation of the ionizing beam. ZhPMTF, no. 4, 1977, 40-47.

82. Gordiyets, B.F., L.I. Gudzenko, and V.Ya. Panchenko (1). Solar-pumped gas laser. ZhETF P, v. 26, no. 3, 1977, 163-165.

83. Izmaylov, I.A., V.A. Kochelap, and Yu.A. Kukibnyy (6). Amplification of light in photorecombination reactions induced by a shock wave. IN: Sb 6, 18-36.

D. CHEMICAL LASERS

1. $\text{CS}_2 + \text{O}_2$

84. Bystrova, T.V., and V.B. Librovich (431). Structure of a plane flame of a weak mixture of $\text{CS}_2 - \text{O}_2$ over a cooled porous burner. FGIV, no. 4, 1977, 512-521.

2. Miscellaneous

85. Igoshin, V.I., and A.N. Orayevskiy (1). Efficiency of a chemical laser under conditions of rotational equilibrium with some deviations. KSpF, no. 7, 1976, 27-31. (RZhRadiot, 7/77, 7Ye100)

E. COMPONENTS

1. Resonators

86. Berger, N.K., I.A. Deryugin, Yu.N. Luk'yanov, and Yu.Ye. Studenikin (0). Open offset resonator with spherical mirrors. OiS, v. 43, no. 2, 1977, 306-310.

87. Boyko, B.B., I.M. Vashkevich, I.Ye. Zuykov, and N.S. Petrov (0). Quality and spectral characteristics of lasing in a laser with a two-dimensional beam path in the resonator. ZhPS, v. 27, no. 2, 1977, 215-221.

88. Kirsanov, B.P., and A.M. Leontovich (1). Using the Wentzel-Kramers-Brillouin method to design laser resonators with an active medium. IN: Tr 1, 141-161.

89. Petrov, V.I., and N.N. Petrova (0). Effect of plane parallel plates, placed in the resonator, on the losses and lasing spectrum of a laser. Deposit at VINITI, no. 1465-77, 18 April 1977, 8 p. (RZhF, 8/77, 8D1208)

90. Soskin, M.S., and V.B. Taranenko (0). Laser dispersion resonators with holographic elements. IN: Sb 2, 163-165. (RZhRadiot, 7/77, 7Ye186)

2. Pump Sources

91. Agafonov, V.G., Zh.I. Alferov, V.M. Andreyev, D.Z. Garbuzov, N.Yu. Davidyuk, and V.R. Larionov (4). Producing radiation converters based on heterostructures in an AlAs-GaAs system. ZhTF, no. 8, 1977, 1756-1764.

92. Alferov, Zh.I., D.Z. Garbuzov, N.Yu. Davidyuk, and V.R. Larionov (4). Study of radiation converters based on heterostructures in an AlAs-GaAs system. ZhTF, no. 8, 1977, 1765-1771.

93. Alferov, Zh.I., V.M. Andreyev, D.Z. Garbuzov, N.Yu. Davidyuk, N.S. Dubrovskaya, B.V. Yegorov, L.M. Kogan, V.R. Larionov, B.V. Pushnyy, I.T. Rassokhin, V.Ye. Chekhimova, and L.T. Chichua (4). Mesa-construction LED's based on binary heterostructures in an AlAs-GaAs system. ZhTF, no. 8, 1977, 1772-1777.

94. Alferov, Zh.I., V.M. Andreyev, B.V. Yegorov, S.G. Konnikov, V.M. Lantratov, and F.M. Tadzhibayev (4). Heterostructures in an Al-Ga-As system with localization of the current flow-through region. ZhTF, no. 8, 1977, 1782-1790.

95. Andreyev, V.M., D.Z. Garbuzov, N.Yu. Davidyuk, B.V. Yegorov, and B.V. Pushnyy (4). High-power LED's based on multipass heterostructures in an AlAs-GaAs system. ZhTF, no. 8, 1977, 1778-1781.

96. Babin, A.A., G.I. Freydman, and A.N. Shchelokov (8). Multistage conversion of pump radiation energy into low frequency radiation energy. KE, no. 7, 1977, 1447-1455.

97. Bykhovskaya, L.N., I.M. Gurevich, V.V. Lopukhin, and L.F. Selivanova (141). Study of the characteristics of fast-response sealed-off dischargers, excited by laser radiation. KE, no. 8, 1977, 1708-1713.

98. Kamrukov, A.S., N.P. Kozlov, V.A. Malashchenko, and Yu.S. Protasov (24). Experimental studies of a plasma focus in erosion plasma accelerators. Part 3. Radiation properties of a dense plasma focus. ZhTF, no. 8, 1977, 1673-1683.

99. Kostin, V.N., V.V. Belous, and S.I. Shipitsyn (34). Study of a high-frequency charge between external ring electrodes and pulsed laser flashlamps. IN: Tr 3, 64-66. (RZhF, 8/77, 8G290)

100. Pavlovskaya, N.G., M.D. Tarasov, V.A. Balakin, V.P. Varava, S.I. Lobov, O.K. Surskiy, and V.A. Tsukerman (0). Superluminescence in CdS crystals under the action of pulsed x-radiation. DAN SSSR, v. 235, no. 3, 1977, 568-570.

101. Podgayetskiy, V.M. (174). Flashlamp pumping of pulsed lasers. Part 1. IN: Sb 4, 93-106.

102. Podgayetskiy, V.M. (174). Flashlamp pumping of pulsed lasers. Part 2. IN: Sb 6, 100-114.

103. Velikhov, Ye.P., V.D. Pis'mennyy, and A.T. Rakhimov (23,98). Non-selfsustained gas discharge for pumping c-w CO₂ lasers. UFN, v. 122, no. 3, 1977, 419-447.

104. Voynik, M.G., A.G. Molchanov, and Yu.M. Popov (1). Ionization instability of a non-selfsustained electric discharge in high-pressure noble gases. ZhTF P, no. 15, 1977, 771-774.

3. Collimators

105. Kratirov, I.A., and V.M. Pavlov (90). Collimation and focusing of a laser beam at a given distance. IVUZ Priboro, no. 8, 1977, 105-109.

4. Diffraction Lattices

106. Vorontsov, V.I., V.I. Kravchenko, Yu.N. Parkhomenko, and I.V. Shpak (51,5). Diffraction of light by a rectangular-profile reflecting diffraction lattice with finite conductivity. UFZh, no. 7, 1977, 1176-1183.

5. Filters

107. Koch, E., M. Fleischer, K. Franke, and I. Gantz (E. Germans).
Pattern recognition using spectral intensity filtering. KE, no. 8, 1977, 1802.
108. Vasil'yev, A.A., P.V. Bashurin, and I.N. Kompanets (1). Tunable spatial filters in optical signal converters. KE, no. 8, 1977, 1714-1721.

6. Mirrors

109. Sokolova, Z.N., and V.B. Khalpin (4). Calculating the characteristics of Bragg mirrors, allowing for losses by radiation and absorption in a waveguide. ZhTF P, no. 16, 1977, 832-837.

7. Detectors

110. Akimov, P.S., and A.N. Kubasov (0). Ranked detection of an optical signal. IVUZ Radioelektr, no. 7, 1977, 29-30.
111. Godik, E.E., A.I. Kuznetsov, V.V. Lazarev, and V.P. Sinis (15). Anomalous impurity photoconductivity of mercury-doped germanium at room temperature. FTP, no. 8, 1977, 1465-1469.
112. Kutakhov, V.P., A.G. Mayko, and Yu.N. Fedyayev (0). Detecting short laser pulses by detectors with inertial photoresistors. Radiotekhnika, no. 2, 1977, 80-83. (RZhRadiot, 7/77, 7Ye312)
113. Sheremet'yev, A.G., and E.V. Borisov (0). Noise rejection of an optical signal receiver under unstable characteristics of the modulator. Radiotekhnika, no. 2, 1977, 92-93. (RZhRadiot, 7/77, 7Ye315)

8. Modulators

114. Belokrinitkiy, N.S., A.V. Gnatovskiy, M.V. Danileyko, V.V. Seleznev, and M.T. Shpak (5). Device for correcting a laser beam. Otkr izobr, no. 31, 1977, 511776.
115. Brzhozovskiy, B.M., V.V. Bondarev, and A.A. Ignat'yev (317). Laser radiation modulator using a diffraction lattice. PTE, no. 4, 1977, 235-236.
116. Kovalev, A.A., Yu.V. Razvin, B.N. Tyushkevich, and S.V. Serak (0). Piezooptical effect on the dynamics and spectral characteristics of an electrooptically switched laser. ZhPS, v. 27, no. 1, 1977, 42-45.
117. Mel'nikova, S.V., A.T. Anistratov, and B.V. Beznosikov (210). Optical properties of ABC_3 type crystals. FTT, no. 7, 1977, 2161-2164.
118. Milinkevich, A.V., V.A. Savva, and A.M. Samson (0). Modulated giant pulses in an inertial feedback laser. Acta physica polonica, v. A50, no. 5, 1976, 737-746. (RZhRadiot, 8/77, 8Yel0)
119. Mitsa, V.M., V.S. Gerasimenko, I.D. Oleksyuk, F.V. Sopko, N.I. Dovgoshey, L.G. Kesler, and L.A. Logina (136). Optical parameters of modulation elements based on glasses of an Hg-As-S system. IN: Sb 6, 96-99.
120. Oleksyuk, I.D., V.V. Tsitrovskiy, I.D. Turyanitsa, I.M. Stoyka, and T.A. Chukhno (136). Preparation and properties of modulation and nonlinear materials based on various chalcogenides. IN: Sb 6, 93-96.

121. Pikhtin, A.N., V.T. Prokopenko, V.S. Rondarev, and A.D. Yas'kov (0).

Refraction of light in GaP. ZhPS, v. 27, no. 2, 19-7, 308-314.

122. Zhiryakov, B.M., and N.I. Popov (16). Some characteristics of weak Q-switching in a ruby laser resonator. KE, no. 8, 1977, 1790-1792.

F. NONLINEAR OPTICS

1. Frequency Conversion

123. Akopyan, S.A., S.M. Arakelyan, R.V. Kochikyan, S.Ts. Nersisyan, and Yu.S. Chilingaryan (37). Efficiency of nonlinear radiation conversion from synchronized third harmonic generation in a cholesteric liquid crystal. KE, no. 7, 1977, 1441-1446.

124. Anokhov, S.P., G.A. Galich, V.I. Kravchenko, and M.S. Soskin (5). New method for c-w wide-band dynamic frequency tuning of stimulated emission. ZhTF P, no. 16, 1977, 816-820.

125. Dmitryuk, A.V., G.O. Karapetyan, A.A. Manenkov, V.V. Osiko, A.I. Ritus, and I.A. Shcherbakov (1). Correlation between cooperative sensitization efficiency and Rayleigh scattering intensity. KE, no. 8, 1977, 1661-1665.

126. Dobrzhanskiy, G.F., L.A. Kulevskiy, Yu.N. Polivanov, R.Sh. Sayakhov, and A.T. Sukhodol'skiy (1). Generation of the difference frequency in LiIO_3 crystals, tunable under dispersion phase matching conditions. KE, no. 8, 1977, 1794-1796.

127. Karlov, N.V., G.P. Kuz'min, and Ye.V. Sisakyan (1). Interference effects during measurement of the absorption coefficients of transparent materials. KE, no. 8, 1977, 1816-1818.

128. Klement'yev, V.M., Yu.G. Kolpakov, and Yu.Ya. Pecherskiy (10). Frequency conversion of a c-w HF chemical laser in nonlinear crystals. KE, no. 7, 1977, 1467-1472.

129. Konev, Yu.B., and N.I. Lipatov (1). Using optical pumping during stimulated Raman scattering in CO_2 in order to produce a high pressure tunable laser at 14 and 16 μ . KE, no. 8, 1977, 1792-1794.

130. Kulevskiy, L.A., A.M. Prokhorov, A.D. Savel'yev, and V.V. Smirnov (0). CdSe and GaSe: nonlinear optical materials for parametric frequency conversion in the infrared. Potsdamer Forschungen, v. 8, no. 7, 1976, 139-147. (RZhF, 8/77, 8D1126)

131. Makogon, M.M. (0). Wide-range tuning of a ruby laser by interference-polarization filters. IVUZ Fiz, no. 7, 1977, 154.

132. Makogon, M.M., V.I. Serdyukov, and A.M. Solodov (78). Continuous dynamic tuning of pulsed laser radiation frequency. KE, no. 7, 1977, 1550-1552.

133. Shigorin, V.D. (1). Study of second harmonic generation in molecular crystals. IN: Tr 1, 78-140.

134. Tagiyev, Z.A., and A.S. Chirkin (2). The efficiency of optical frequency conversion in inhomogeneous nonlinear media. KE, no. 7, 1977, 1503-1508.

135. Zhmudskiy, A.Z., A.M. Steba, and V.L. Strizhevskiy (51). Harmonic generation in gases by divergent radiation. IN: Sb 4, 45-53.

2. Parametric Processes

136. Ignatavichyus, M.V., A.S. Piskarskas, A.Yu. Stabinis, and A.S. Yuozapavichyus (0). Four-photon parametric frequency-tunable mixing of picosecond optical wave packets. ZhTF P, no. 16, 1977, 808-811.

137. Karpenko, S.G., F.N. Marchevskiy, and V.L. Strizhevskiy (51). Polariton parametric oscillation inside a laser resonator. KE, no. 7, 1977, 1552-1556.

3. Stimulated Scattering

a. Raman

138. Arbatskaya, A.N. (1). Study of the angular distribution of stimulated Raman scattering. IN: Tr 4, 3-48.

139. Butylkin, V.S., G.V. Venkin, L.L. Kulyuk, D.I. Maleyev, Yu.G. Khronopulo, and M.F. Shalyayev (2). The role of parametric and Raman processes during the emission of the axial second Stokes component in stimulated Raman scattering. KE, no. 7, 1977, 1537-1546.

140. Dzhotyan, G.P., Yu.Ye. D'yakov, and V.G. Sushko (2). Theory of a transient regime of stimulated Raman scattering during saturation. VMU, no. 4, 1977, 95-102.

141. Herrmann, J. (East German). The correlation between Stokes and anti-Stokes radiation and the effect of phase modulation during stimulated Raman scattering of ultrashort pulses in a dispersion medium. KE, no. 8, 1977, 1779-1787.

142. Karagodova, T.Ya., and A.I. Karagodov (0). Study of stimulated electron Raman scattering at magnetic sublevels of atoms. OiS, v. 43, no. 2, 1977, 376-377.

143. Kondilenko, Ye.I., and V.I. Malyy (0). Anomalous broadening of stimulated Raman scattering lines in liquids. OiS, v. 43, no. 1, 1977, 59-63.

144. Kormer, S.B., G.G. Kochemasov, V.D. Nikolayev, and V.D. Urlin (0). Spurious transverse emission in Raman lasers with cryogenic active media. KE, no. 7, 1977, 1566-1570.

145. Kudryavtseva, A.D. (1). Study of the formation and self-focusing of stimulated Raman scattering in condensed media. IN: Tr 4, 49-99.

146. Makhviladze, T.M., and M.Ye. Sarychev (1). Stationary stimulated Raman scattering regimes in an ultrashort pulse field. IN: Tr 4, 145-156.

147. Makhviladze, T.M., and M.Ye. Sarychev (1). Angular distribution of stimulated Raman scattering. IN: Tr 4, 157-174.

148. Marchevskiy, F.N., and V.L. Strizhevskiy (51). Nonstationary Raman scattering by vibrational and polariton excitations. IN: Sb 4, 79-90.

149. Marchevskiy, F.N., V.L. Strizhevskiy, and V.P. Feshchenko (51).

Correlation spectroscopy of nonstationary Raman scattering by polaritons.

IN: Sb 4, 90-93.

150. Morozova, Ye.A. (1). Study of the spectral intensity distribution of components of stimulated Raman scattering in matter in a condensed state. IN: Tr 4, 100-144.

151. Zolin, V.F., and M.A. Samokhina (15). Stimulated Raman scattering spectra in a liquid optical fiber. KE, no. 7, 1977, 1604-1606.

b. Rayleigh

152. Zaskal'ko, O.P., and V.S. Starunov (1). Spectral and time characteristics of stimulated Rayleigh line-wing scattering in an external transverse resonator. ZhETF P, v. 26, no. 3, 1977, 145-149.

c. Miscellaneous Scattering

153. Arutyunyan, V.M., G.G. Adonts, T.A. Papazyan, S.M. Sarkisyan, G.M.

Arzumanyan, and T.E. Meliksetyan (37). Spectral-angular distribution of stimulated four-photon resonance scattering in a three-level system.

IAN Arm, no. 5, 1977, 338-346.

154. Dubrovskiy, V.A., and B.G. Tsikin (99). Stimulated scattering in a

Compton laser by decelerated waves (semiclassical theory). KE, no. 7, 1977, 1473-1481.

4. Self-focusing

155. Paturyan, S.V., and N.V. Shakhnazaryan (37). Self-focusing during the interaction of two intense waves in a system of multilevel atoms. IAN Arm, no. 4, 1977, 261-266.

156. Radchenko, V.V., and G.M. Fedorov (98). Nonlinear focal region from nonstationary thermal self-focusing of laser radiation in optical glass. KE, no. 8, 1977, 1754-1760.

5. Acoustic Interaction

157. Belokon', V.A., O.V. Rudenko, and R.V. Khokhlov (2). Aerodynamic phenomena during supersonic flow over a laser beam. Akusticheskiy zhurnal, no. 4, 1977, 632-634.

158. Belova, G.N. (21). Internal modulation of gas laser radiation using acoustic surface waves. KE, no. 7, 1977, 1592-1595.

159. Bozhkov, A.I., F.V. Bunkin, Al.A. Kolomenskiy, A.I. Malyarovskiy, and V.G. Mikhalevich (0). Study of the acoustic field of a moving optoacoustic antenna. IN: Sb 7, 5-8.

160. Mkrtchyan, A.R., and L.A. Kocharyan (37). The effect of ultrasonic excitations on a gamma-resonance line width. KE, no. 7, 1977, 1581-1582.

6. General Theory

161. Krulikovskiy, B.K., M.P. Lisitsa, U.Nasyrov, and I.V. Fekeshgazi (6). Nonlinear absorption of ruby laser radiation in crystalline and glassy As_2S_3 . IN: Sb 4, 74-79.

162. Kuz'min, M.V., and V.N. Sazonov (1). Theory of excitation of a quantum nonlinear oscillator by a harmonic force. ZhETF, v. 73, no. 2, 1977, 422-429.

G. SPECTROSCOPY OF LASER MATERIALS

163. Aristov, A.V., and V.S. Shevandin (0). Spectra of stimulated singlet-singlet absorption in rhodamine dyes in the 15000-25000 cm^{-1} range. OiS, v. 43, no. 2, 1977, 228-232.

164. Bagdasarov, Kh.S., L.B. Pasternak, and B.K. Sevast'yanov (13). Radiation color centers in $\text{Y}_3\text{Al}_5\text{O}_{12}:\text{Cr}^{3+}$ crystals. KE, no. 8, 1977, 1702-1707.

H. ULTRASHORT PULSE GENERATION

165. Heumann, E., W. Triebel, and B. Wilhelm (NS). Device for obtaining ultrashort optical pulses. Patent GDR, no. 119916, issued 12 May 1976. (RZhRadiot, 7/77, 7Ye192)

J. THEORETICAL ASPECTS OF ADVANCED LASERS

166. Vysotskiy, V.I., and V.I. Vorontsov (51). Amplification in a parametric nonthreshold X-ray (gamma) laser. ZhETF, v. 73, no. 1, 1977, 54-70.

K. GENERAL LASER THEORY

167. Chibisov, M.I., and S.I. Yakovlenko (23). Vibrational autoionization of a molecule and recombination of nonsymmetric molecular ions. ZhETF, v. 73, no. 1, 1977, 41-53.

168. Kitayev, Yu.E., and V.B. Khalfin (4). Discrimination of symmetric and antisymmetric modes in distributed feedback lasers. ZhTF P, no. 13, 1977, 615-620.

169. Kravchenko, V.I., A.A. Smirnov, and M.S. Soskin (5). Laser [with a dispersion prism between the active and nonlinear elements]. Otkr izobr, no. 31, 1977, 346999.

170. Malov, A.N., V.N. Morozov, I.N. Kompanets, and Yu.M. Popov (1). Enhancing the resolving capabilities of coherent optical systems by using aperture synthesis. KE, no. 7, 1977, 1608-1610.

171. Nefed'yev, L.A., and A.I. Siraziyev (214). Coherent optical and acoustic responses in degenerated and multilevel systems.
IN: Tr 5, 71-105. (RZhF, 8/77, 8D1096)

172. Tron'ko, V.D. (51). Basic propositions of the matrix theory of electro- and magnetooptic active media. IN: Sb 6, 53-60.

173. Zusman, L.D. (77). Kinetics of luminescence damping in the jump mechanism of quenching. ZhETF, v. 73, no. 2, 1977, 662-670.

II. LASER APPLICATIONS

A. BIOLOGICAL EFFECTS

174. Bogush, N.A., V.A. Mostovnikov, S.I. Mokhoreva, A.T. Pikulev, A.N. Rubinov, and I.V. Khokhlov (3,87). Mechanism of the broad-spectrum stimulating action of laser radiation [on enzymes]. DAN B, no. 8, 1977, 759-762.

175. Boyko, V.A., and I.V. Kholin (0). Laser plasma in biology. Priroda, no. 7, 1977, 129-130.

176. Savin, B.M., and Ye.Ye. Kolchin (429). Physiological principles of visual perception stimulated by IR radiation. DAN SSSR, v. 235, no. 6, 1977, 1459-1461.

177. The "Skal'pel'" laser surgical apparatus [patent pending]. Otkr izobr, no. 25, 1977, p. 315.

B. COMMUNICATIONS SYSTEMS

178. Alishev, Ya.V., and A.A. Berkutov (430). Improving the noise rejection of an optical signal receiver in a laser communications line with a frequency-modulated subcarrier. IN: Sb 6, 114-116.

179. Alyab'yev, B.V., N.G. Basov, A.A. Zaretskiy, M.A. Kattsev, I.I. Klimov, V.D. Kurnosov, A.A. Matsveyko, V.N. Morozov, Yu.M. Popov, D.K. Sattarov, S.S. Saifulina, A.S. Semenov, A.B. Sergeev, M.F. Stel'makh, R.P. Shidlovskiy, and I.V. Yashumov (0). Eight-channel fiber optic communications link between computer systems. KE, no. 7, 1977, 1610-1613.

180. Artyushin, L.F., O.I. Ioshin, O.G. Ovilko, and S.G. Muchiyev (231). Motion-picture television system for printing and recording a color image by a laser beam on a motion picture film with film materials and videotape. TKiT, no. 7, 1977, 3-11.

181. Bazarnyy, Ye.M., V.I. Borodulin, Yu.V. Gulyayev, V.N. Listvin, V.T. Potapov, V.P. Sosnin, M.F. Stel'makh, D.P. Tregub, B.B. Elenkrig, and V.I. Shveykin (0). Using semiconductor terminals in high-information-capacity fiber-optic communication lines. RiE, no. 7, 1977, 1534-1537.

182. Bozhevol'nyy, S.I., Ye.M. Zolotov, V.A. Kiselev, A.M. Prokhorov, and Ye.A. Shcherbakov (1). Focusing diffraction lattices for integrated optics. ZhTF P, no. 15, 1977, 746-750.

183. Bryskina, I.V., V.N. Deryagin, L.Ye. Marasin, and Yu.V. Popov (7). Effect of time characteristics of a semiconductor laser in a pulsed-phase optical DME, on the accuracy of distance measurement by the DME. OMP, no. 8, 1977, 49-51.

184. Dianov, Ye.M., A.A. Manenkov, and A.I. Ritus (1). Brillouin and Rayleigh scattering in fiber light guides: measurement of angular distribution of the scattering intensity, scattering loss and polarization rotation. KE, no. 7, 1977, 1488-1496.

185. Grigor'yev, V.M. (160), V.N. Kosolov, and V.V. Yurchev (174). Possibility of using single-pulse ruby lasers in autonomous weather stations. IN: Sb 8, 3-6.

186. Grigor'yev, V.M. (160), V.N. Kosolobov, and V.V. Yurchev (174).
Study of the effect of concentrating chromium ions in the active element, on the energy characteristics of a ruby laser for autonomous weather stations, in the $\pm 50^\circ \text{C}$ temperature range. IN: Sb 8, 6-9.

187. Grigor'yev, V.M. (160). Laser cloud-ceilometers (review).
IN: Sb 9, 3-8.

188. Gus'kov, N.A., and O.L. Penov (0). Noise rejection of analog optical communications channels. Radiotekhnika, no. 2, 1977, 84-86.
(RZhRadiot, 7/77, 7Ye316)

189. Nesic, D. (NS). Optical transmission of information. Telekomunikacije, no. 4, 1976, 9-14. (RZhRadiot, 8/77, 8Ye250)

190. Nesterov, Z.V., Yu.V. Popov, V.M. Fedulov, D.K. Sattarov, and K.M. Freyvert (0). Transmission of high frequency modulated radiation by fiber lightguides. KE, no. 7, 1977, 1597-1600.

191. Pan'kin, V.G., V.Yu. Pchelkin, and V.V. Shashkin (10). The use of the WKB method for determining the refractive index profile in plane diffusion waveguides. KE, no. 7, 1977, 1497-1502.

192. Volodin, Ye.B., and K.K. Svidzinskiy (0). Possibility of constructing integrated controlled transparencies for optical digital technology and communications. Avtometriya, no. 4, 1977, 68-76.

193. Vorob'yev, Yu.S., O.I. Gorbunov, Yu.K. Rudov, and V.T. Khrykin (0). Quantum electronic devices in experimental fiber optic communications link installations. KE, no. 8, 1977, 1796-1799.

194. Zolotov, Ye.M., V.A. Kiselev, V.M. Pelekhatyy, A.M. Prokhorov, and Ye.A. Shcherbakov (1). Diffrational radiation and excitation of E and H waves in diffuse optical waveguides. KE, no. 7, 1977, 1426-1432.

C. BEAM PROPAGATION

1. In the Atmosphere

195. Donchenko, V.A., M.V. Kabanov, and P.A. Pal'yanov (0). Preliminary results of experimental studies on the propagation of picosecond laser pulses in a scattering medium. IN: Sb 10, 5-13. (RZhRadiot, 8/77, 8Ye284)

196. Donchenko, V.A., Yu.I. Kulakov, and V.V. Terent'yev (0). Experimental studies of the propagation of short laser pulses in haze. Experimental apparatus and methods. IN: Sb 11, 180-184. (RZhGeofiz, 7/77, 7B87)

197. Donchenko, V.A., Yu.I. Kulakov, and V.V. Terent'yev (0). Experimental studies of the propagation of short laser pulses in haze. Depolarization of radiation scattered at 180°. IN: Sb 11, 185-189. (RZhF, 8/77, 8D1086)

198. Donchenko, V.A., and I.P. Koktorov (0). Evaluating the possibilities of probing the atmosphere at 2.36 μ . IN: Sb 11, 190-197. (RZhGeofiz, 7/77, 7B86)

199. Galakhov, N.V., A.V. Yefremov, A.F. Zhukov, V.V. Reyno, and R.Sh. Tsvyk (78). Statistical characteristics of intensity fluctuations of laser radiation during propagation in precipitation. Institut optiki atmosfery SOAN. Preprint, no. 17, 1976, 52 p. (RZhGeofiz, 7/77, 7B85)

200. Gurvich, A.S., M.A. Kallistratova, and F.E. Martvel' (64). Study of strong fluctuations of optical intensity in a turbulent medium with a small wave parameter. IVUZ Radiofiz, no. 7, 1977, 1020-1031.

201. Kabanov, M.V. (0). Interpreting the effects of scattering of ultrashort pulses of optical radiation in disperse media. IN: Sb 10, 14-17. (RZhRadiot, 8/77, 8Ye324)

202. Kondilenko, I.I., P.A. Korotkov, and O.K. Kostko (51). Raman lidar spectroscopy of the atmosphere. IN: Sb 4, 24-45.

203. Lugin, E.V. (0). Propagation of an ultrashort pulse in the band of an absorption gas. IN: Sb 10, 18-27. (RZhRadiot, 8/77, 8Ye373)

204. Prishivalko, A.P. (3). Relative humidity and light scattering by systems of homogeneous and two-level atmospheric aerosol particles. FAIO, no. 8, 1977, 828-837.

205. Volkovitskiy, O.A. (0). Changing the transparency of an aqueous aerosol at the probing frequency in its bleaching zone, using a CO₂ laser beam. RiE, no. 7, 1977, 1379-1383.

206. Zborovskiy, A.A. (7). Evaluating the effect of atmospheric turbulence on the accuracy of an optical goniometer. OMP, no. 7, 1977, 9-10.

207. Zemlyanov, A.A., V.A. Pogodayev, V.N. Pozhidayev, and L.K. Chistyakova (0). Optical transparency of weakly absorbing droplets in intense optical fields. ZhPMTF, no. 4, 1977, 33-37.

2. In Liquids

208. Bozhkov, A.I., and L.L. Gyrdev (0). Effect of the surface wave state of a liquid on the directivity pattern of a "floating" optoacoustic antenna. IN: Sb 7, 9-12.

209. Kasoyev, S.G., and L.M. Lyamshev (21). Generation of sound in a liquid by a laser beam modulated by the intensity of an FM signal. Akusticheskiy zhurnal, no. 4, 1977, 608-614.

210. Kozlov, D.N., A.I. Malyarovskiy, O.G. Semenov, K.F. Shipilov, and T.A. Shmaonov (118). Study of stimulated scattering of light by a liquid surface. IN: Tr 2, 100-107. (RZhF, 8/77, 8D1161)

211. Martynenko, O.G., G.V. Myakin, V.K. Popov, A.D. Solodukhin, and S.I. Stepanov (0). Optical methods for studying various parameters of heat and mass exchange in the sea. Inzhenerno-fizicheskiy zhurnal, no. 4, 1977, 602-606. (RZhF, 8/77, 8D1091)

212. Rozhdestvenskaya, N.B., E.N. Gorbacheva, and A.N. Ryabinin (12). Apparatus for determining the coefficient of scattering of light in liquid by an absolute method. PTE, no. 4, 1977, 241-243.

213. Teslenko, V.S. (76). Study of optoacoustic and optohydrodynamic parameters of laser breakdown in liquids. KE, no. 8, 1977, 1732-1737.

214. Vas'kova, V.I., I.A. Viktorov, and A.A. Talashev (21). Diffraction of light by surface waves at a solid-liquid interface. Akusticheskiy zhurnal, no. 4, 1977, 644-646.

3. Theory

215. Pinchuk, V.P., and N.P. Romanov (0). Absorption cross-section of arbitrary-size spherical particles with moderate absorption. ZhPS, v. 27, no. 1, 1977, 109-116.

216. Sorokin, Yu.M. (94). Using scanning beams to form a positive heat lens in a defocusing medium. ZhTF P, no. 15, 1977, 755-758.

217. Zavorotnyy, V.U., V.I. Klyatskin, and V.I. Tatarskiy (64). Strong intensity fluctuations of electromagnetic waves in randomly inhomogeneous media. ZhETF, v. 73, no. 2, 1977, 481-497.

D. COMPUTER TECHNOLOGY

218. Zaletayev, S.P., and L.F. Taure (177,427). Photorefraction in thin layers of organic compounds. IAN Lat, no. 4, 1977, 15-17.

E. HOLOGRAPHY

219. Anikin, A.A., and A.A. Sokolov (0). Determining the effective depth for recording optical information in absorptive materials. Avtometriya, no. 4, 1977, 84-87.

220. Artyushenko, V.G., and A.V. Nikolaychik (118). Measuring the distribution of the index of refraction by the cross-section of an optical fiber. IN: Tr 2, 13-16. (RZhF, 8/77, 8D1517)

221. Avrorin, A.V., Yu.K. Volkov, Ye.A. Kopylov, M.I. Kotlyachkov, and V.V. Kuznetsov (0). Effect of polarization phenomena on the image quality in SHF holography. Avtometriya, no. 4, 1977, 76-79.

222. Berdonosov, V.A., V.I. Gorbunov, A.K. Stoyanov, and L.K. Yanisova (197). Two-frequency hologram formation in the shortwave range. IN: Tr 6, 148-153. (RZhF, 8/77, 8D1473)

223. Berdonosov, V.A., V.I. Gorbunov, A.A. Popov, and A.K. Stoyanov (197). Obtaining three-dimensional X-ray images from shadow X-ray photographs by holographic methods. IN: Tr 6, 157-159. (RZhRadiot, 8/77, 8Ye422)

224. Berezin, P.D., I.N. Kompanets, A.G. Timushev, I.V. Tunismanova, and V.A. Tsekhomskiy (1). Optimization of the process of holographic data recording in photochromatic glasses. KE, no. 7, 1977, 1587-1589.

225. Gnatovskiy, A.V., V.V. Seleznev, and M.T. Shpak (5). Holographic method for reducing laser radiation divergence. IN: Sb 6, 36-53.

226. Kalashnikov, S.P., I.I. Klimov, V.V. Nikitin, and G.I. Semenov (1). Recording Fourier holograms with pulsed semiconductor laser radiation. KE, no. 8, 1977, 1666-1672.

227. Kartashov, O.G., L.F. Kupchenko, and T.G. Lishchina (0). Using diffraction lattices to adjust holographic matching filtration systems. PTE, no. 4, 1977, 228-229.

228. Kukhar', N.R. (0). Noise in the graininess of excess Fourier-holograms for one class of diffusers. OIS, v. 43, no. 1, 1977, 129-134.

229. Kulipanov, G.N., and A.N. Skrinskiy (79). Use of synchrotron radiation: status and prospects. UFN, v. 122, no. 3, 1977, 369-418.

230. Morozov, V.N. (1). The theory of holograms with a coded reference beam. KE, no. 8, 1977, 1694-1701.

231. Nakhodkin, N.G. (51). Thermoplastic media. IN: Sb 6, 66-93.

232. Polikanin, A.M., B.A. Budkevich, V.I. Kovalevskiy, and V.V. Sviridov (299). Some holographic characteristics of $Hg_3Se_2I_2$ films. ZhNiPFIK, no. 4, 1977, 306-307.

233. Vaytsel', V.I. (0). Using holographic methods in stellar interferometry. OiS, v. 43, no. 2, 1977, 324-330.

234. Verbovetskiy, A.A., L.P. Vakhtanova, E.A. Gruz, and K.S. Bogomolov (0). Parameters of bleached holograms with binary information during physical development. OiS, v. 43, no. 1, 1977, 135-138.

235. Vinetskiy, V.L., T.Ye. Zaporozhets, N.V. Kukhtarev, A.S. Matviychuk, M.S. Soskin, and G.A. Kholodar' (5,51). Conversion of coherent optical beam energy by semiconductors in crossed electrical and magnetic fields. UFZh, no. 7, 1977, 1141-1146.

236. Vlasov, N.G., and A.Ye. Shtan'ko (0). Possibility of developing interference methods based on spatial correlation of radiation intensity of heat sources. OiS, v. 43, no. 1, 1977, 192-194.

237. Vlasov, V.I., A.A. Kikineshi, D.G. Semak, and D.V. Chepur (136). Temperature dependence of the efficiency of optical recording and erasure in AsSe chalcogenide glass. UFZh, no. 7, 1977, 1199-1202.

238. Yevtikhiyev, N.N., V.D. Baurin, A.R. Krebs, V.G. Pyn'ko, N.A. Ekonomov, and N.A. Zamyatina (161). Properties of single-crystal cobalt ferrite films and the possibility of using them as recording media in holography. ZhTF, no. 7, 1977, 1529-1533.

239. Zeylikovich, I.S. (0). Visibility and localization of bands in holographic interferometry of phase objects with a scatterer.
OIS, v. 43, no. 1, 1977, 190-192.

F. LASER-INDUCED CHEMICAL REACTIONS

240. Ambartsumyan, R.V., Yu.A. Gorokhov, G.N. Makarov, A.A. Puretskiy, and N.P. Furzikov (72). Osmium isotope separation by OsO_4 molecule dissociation in a dual frequency IR laser field. KE, no. 7, 1977, 1590-1591.

241. Batkin, I.S., Yu.G. Smirnov, and T.A. Churakova (137). Mesonic atoms with light nuclei in a field of resonant electromagnetic radiation.
ZhETF, v. 73, no. 2, 1977, 387-393.

242. Bekov, G.I., V.S. Letokhov, and V.I. Mishin (72). Ionization by a pulsed electric field of high-lying states of the sodium atom.
ZhETF, v. 73, no. 1, 1977, 157-165.

243. Gershenson, Yu.M., V.B. Rozenshteyn, and S.Ya. Umanskiy (0). Heterogeneous relaxation of the vibrational energy of molecules.
IN: Sb 12, 61-97.

244. Kalanov, T.Z., A.I. Osipov, and V.Ya. Panchenko (0). Distribution of vibrational energy in a binary reactive mixture of molecular gases in a resonant laser radiation field. ZhPMTF, no. 4, 1977, 3-12.

245. Karlov, N.V., B.B. Krynetskiy, and O.M. Stel'makh (1). Direct experimental determination of the length of time for spontaneous decay of the 2P level of the Li atom. ZhTF P, no. 14, 1977, 716-718.

246. Letokhov, V.S., V.I. Mishin, and A.A. Puretskiy (0). Selective photoionization of atoms by laser radiation. IN: Sb 12, 3-60.

247. Polkovnikov, B.F. (0). Second scientific and technical convention-seminar on the problem "laser isotope separation," Bakuriani, 6-13 March 1977. KE, no. 8, 1977, 1840-1844.

248. Shalagin, A.M. (72). Determining relaxation characteristics by a polarization method in nonlinear spectroscopy. ZhETF, v. 73, no. 1, 1977, 99-111.

249. Skorobogatov, G.A. (12). Radial vibrations during pulsed photolysis of gases in a cylindrical cell. ZhTF, no. 7, 1977, 1551-1554.

G. MEASUREMENT OF LASER PARAMETERS

250. Aristov, A.V., D.A. Kozlovskiy, M.B. Levin, and A.S. Cherkasov (0). Agreement between the calculated and experimental lasing powers of flashlamp-pumped rhodamine lasers. OiS, v. 43, no. 1, 1977, 118-124.

251. Astrov, Yu.A., V.V. Yegorov, Sh.S. Kasymov, V.M. Murugov, L.G. Paritskiy, S.M. Ryvkin, and Yu.N. Sheremet'yev (4). New photographic device for studying the characteristics of IR laser radiation. KE, no. 8, 1977, 1681-1685.

252. Astrov, Yu.A., V.V. Yegorov, V.M. Murugov, L.G. Paritskiy, L.M. Portsel', S.M. Ryvkin, and Yu.N. Sheremet'yev (4). Semiconductor ionization-type photographic device for recording laser radiation in the 1-3.8 μ spectral range. ZhTF P, no. 14, 1977, 701-704.

253. Benditskiy, A.A., A.A. Bogatikov, V.Ye. Kravtsov, G.I. Rukman, Ye.B. Shelemin, and A.V. Khromov (141). The performance of an aerosol coupler under intense radiation. KE, no. 7, 1977, 1559-1560.

254. Borisovskiy, S.P., V.A. Vereykin, A.N. Vlasov, Ye.P. Ostapchenko, V.V. Teselkin, Ye.G. Chulyayeva, and Yu.M. Yakovlev (0). Measuring the stability and reproducibility of the lasing frequency of gas lasers. IT, no. 8, 1977, 45-48.

255. Durmanov, S.T., and L.N. Plyashkevich (0). Measuring the optical energy contrast of a high-power laser. PTE, no. 4, 1977, 230-232.

256. Gnatovskiy, A.V., A.P. Loginov, V.V. Seleznev, and M.T. Shpak (5). Interferometric method for correcting the output characteristics of gas lasers. UFZh, no. 8, 1977, 1390-1392.

257. Godlevskiy, A.P., V.P. Lopasov, and S.F. Luk'yanenko (78). Obtaining quantitative data on absorption line parameters in intracavity spectroscopy. KE, no. 8, 1977, 1771-1778.

258. The IMO-2-2 standard second class meter for measuring medium-power lasers. IT, no. 7, 1977, 90.

259. Kratirov, I.A. (90). Optimal parameters of a laser beam at the output of an optical system. IVUZ Priboro, no. 7, 1977, 97-101.

260. Leont'yev, V.G., and S.V. Pis'mennyy (0). Output power of a gas laser, allowing for unsaturated gain along the tube. OiS, v. 43, no. 2, 1977, 366-368.

261. Litvinov, V.F., A.S. Semenov, A.B. Sergeyev, and V.F. Trukhin (0). Study of the picosecond structure of semiconductor injection laser radiation. IN: Sb 1, 145-153. (RZhF, 8/77, 8D1416)

262. Lobachev, M.I., E.M. Rabinovich, and V.V. Tuchin (99). Simple method for measuring fluctuations in the diameter of a laser beam. PTE, no. 4, 1977, 233-234.

263. Lopasov, V.P., and A.K. Toropov (0). Problems of accuracy control in measuring the spectral characteristics of lasers in laser spectroscopy. IT, no. 8, 1977, 43-45.

264. Lovinskiy, L.S., L.N. Samoylov, V.I. Sapritskiy, and B.M. Stepanov (0). Special state standard unit for power density of illumination of c-w optical radiation in a continuous spectrum in the 0.2-4.5 μ range. IT, no. 8, 1977, 3-4.

265. Peschel, C., A. Wiemer, H. Orzegowski, and G. Thiede (NS). Device for calculating the energy from several laser resonators. Patent GDR, no. 119914, issued 12 May 1976. (RZhRadiot, 7/77, 7Ye288)

266. Sapritskiy, V.I., L.S. Lovinskiy, L.N. Samoylov, and B.M. Stepanov (0). Special state standard unit for spectral power density of brightness of c-w optical radiation in a continuous spectrum in the 0.25-2.5 μ range. IT, no. 8, 1977, 5-7.

267. Solomakha, D.A., and A.K. Toropov (129). Measuring laser wavelengths (survey). KE, no. 8, 1977, 1637-1660.

268. Tuchin, V.V., and V.I. Chetverikov (0). Calculating the frequency- and amplitude-fluctuation spectra of a gas laser during fluctuations of the discharge current. RiE, no. 8, 1977, 1635-1644.

269. Yevteyev, G.V., and V.V. Chernigovskiy (110). Experimental demonstration of the necessity for using a Fresnel approximation in calculating the conversion of a laser beam. IVUZ Priboro, no. 7, 1977, 101-104.

H. LASER MEASUREMENT APPLICATIONS

1. Direct Measurement by Laser

270. Algazin, Yu.B., A.V. Arkhipenko, M.R. Baklanov, Yu.A. Blyumkina, K.K. Svitashov, L.V. Semenenko, and S.A. Stepanov (0). Study and analysis of the operating characteristics of an automated ellipsometric apparatus. OiS, v. 43, no. 1, 1977, 168-175.

271. Alkhimov, A.P., A.N. Papyrin, A.L. Predein, and R.I. Soloukhin (0). Experimental study of the effect of a fast particle delay in a supersonic gas flow. ZhPMTF, no. 4, 1977, 80-88.

272. Al'tshuler, G.B., Ye.D. Isyanova, V.B. Karasev, A.L. Levit, V.M. Ovchinnikov, and S.F. Sharlay (0). Analysis of the criticality to misalignment of ring schemes in laser resonators. KE, no. 7, 1977, 1517-1521.

273. Anokhov, S.P., Yu.Yu. Zhupan, V.I. Kravchenko, and V.V. Tarabrov (5). Laser [with a ring dispersion resonator and a passive switch]. Otkr izobr, no. 31, 1977, 473475.

274. Antal, K., I. Bolla, E. Tanos, and A. Pilinyi (NS). Study of MHD generators and methods of plasma diagnostics. Muszaki tudomany, no. 1-2, 1976, 53-78. (RZhF, 8/77, 8G372)

275. Atutov, S.N., V.P. Kochanov, E.G. Saprykin, and G.I. Smirnov (O). Fabry-Perot laser spectrometer. OiS, v. 43, no. 2, 1977, 331-338.

276. Baklanov, Ye.V., and V.P. Chebotayev (10). Setup of precision physical experiments in optics. UFN, v. 122, no. 3, 1977, 513-524.

277. Baptizmanskiy, V.V., I.I. Novak, and A. Chmel' (O). Raman spectrum of disturbed total internal reflection in α -quartz. OiS, v. 43, no. 1, 1977, 188-190.

278. Bessmel'tsev, V.P., V.N. Burnashov, and V.V. Vorob'yev (75). Pulsed counting converter for a laser displacement meter. Otkr izobr, no. 23, 1977, 528778

279. Birman, A.Ya., and A.F. Savushkin (O). Nonlinear phenomena in a ring laser with an inhomogeneous nonmutual element. OiS, v. 43, no. 1, 1977, 114-117.

280. Birman, A.Ya., A.F. Savushkin, and Ye.N. Tropkin (O). Competition of opposed waves in a monoisotopic ring laser with an anisotropic resonator. OiS, v. 43, no. 2, 1977, 320-323.

281. Bodner, V.A., and Yu.F. Zastrogan (O). Using a laser interferometer with a three-mirror resonator in machine building. IN: Sb 13, 3-14. (RZhRadiot, 8/77, 8Ye392)

282. Butov, V.L., and A.I. Povrozin (0). Measuring the velocity of water flows in wide troughs by means of a laser Doppler velocimeter. Avtometriya, no. 4, 1977, 64-67.

283. Chernyshev, L.L., V.L. Konyukov, and Yu.V. Chernobrovtsiev (149). Using an optical Doppler method to measure the parameters of a turbulent current in turbomachine grids. IN: Tr 7, 133-136. (RZhMekh, 8/77, 8B1324)

284. Danileyko, M.V., V.R. Kozubovskiy, and A.P. Nedavniy (0). Nonlinear laser spectroscopy within a Doppler line. IN: Sb 4, 3-24.

285. Danileyko, M.V., and A.P. Nedavniy (5). Resonance phenomena in ring lasers with nonlinear absorption. Part 1. Effects of competition and phase interaction of waves in ring lasers. IN: Sb 6, 3-17.

286. Danelyus, R., G. Dikchyus, V. Kabelka, P. Lokay, A. Piskarskas, and V. Smil'gyavichyus (49). Resonant picosecond spectroscopy based on parametric optical devices. ZhTF P, no. 15, 1977, 742-745.

287. Golovin, V.A. (19). Research and development of a laser anemometer network for single-phase and two-phase media. IN: Tr 8, 65-71. (RZhMekh, 8/77, 8B1322)

288. Gonchukov, S.A., V.M. Yermachenko, V.N. Petrovskiy, and Ye.D. Protsenko (16). Two-mode lock-in in a standing wave gas laser. ZhETF, v. 73, no. 2, 1977, 462-469.

289. Gorbachenko, G.M., S.A. Zverev, V.V. Kushin, and V.K. Lyapidevskiy (0). Using thermoluminescence detectors for spectrometry of pulsed x-radiation in a hot plasma. IAN Fiz, no. 7, 1977, 1321-1325.

290. Gramolina, N.O., Yu.A. Komarov, V.M. Krylov, and G.F. Muchnik (0). Electrooptic means for measuring the concentration of electrolytes. IT, no. 7, 1977, 82-83.

291. Kondratov, V.A., I.I. Kosarev, and A.M. Zhidovinov (0). Laser dilatometer for measuring small negative coefficients of linear scattering. IT, no. 7, 1977, 57-59.

292. Kravchenko, V.I. (5). Traveling wave laser. Otkr izobr, no. 29, 1977, 297337.

293. Krsek, J., and A. Stejskal (NS). Control and compensation unit for a laser interferometer. Author's certificate Czechoslovakia, no. 158033, issued 15 May 1975. (RZhRadiot, 7/77, 7Ye421)

294. Ledneva, G.P., and Yu.I. Chekalinskaya (0). Polarization-frequency characteristics of complex anisotropic ring resonators with one and two coupling mirrors. ZhPS, v. 27, no. 1, 1977, 46-52.

295. Makogon, M.M., and A.M. Solodov (78). Quasistationary single-frequency laser in a pulsed Nd:glass ring laser. ZhTF P, no. 15, 1977, 767-770.

296. Mel'nikov, N.A., E.I. Ordenko, and V.I. Chernyshev (163). Stable discharge-current source for a converter for measuring angular velocity, based on an He-Ne ring laser. IN: Tr 9, 40-43. (RZhF, 8/77, 8D1426)

297. Milovskiy, N.D., and L.L. Popova (0). Modes in a ring resonator with an auxiliary reflex mirror. OiS, v. 43, no. 2, 1977, 311-319.

298. Nazarenko, M.M., I.I. Savel'yev, S.S. Skulachenko, A.M. Khromykh, and I.I. Yudin (0). Study of Zeeman beats in a double-mode traveling wave laser. KE, no. 8, 1977, 1738-1746.

299. Nevskiy, L.B. (7). Using shift interferometers to study gas flows. OMP, no. 7, 1977, 6-9.

300. Pestov, E.G., and G.S. Kruglik (0). Interference effect of lock-in zone constriction in a two-mode ring laser. ZhPS, v. 27, no. 2, 1977, 222-225.

301. Popela, B. (NS). Device for automatic correction of a laser interferometer. Author's certificate Czechoslovakia, no. 159330, issued 15 August 1975. (RZhRadiot, 7/77, 7Ye402)

302. Povrozin, A.I., V.I. Surkov, and V.L. Butov (0). Optical Doppler velocimeter for measuring low velocities of turbulent flows. IT, no. 8, 1977, 48-49.

303. Privalov, V.Ye., and Yu.V. Filatov (163). Study of the output characteristics of a rotating ring gas laser. KE, no. 7, 1977, 1418-1425.

304. Privalov, V.Ye. (163). Raising the accuracy of measuring motion parameters by means of ring lasers. IN: Tr 9, 35-39. (RZhF, 8/77, 8D1464)

305. Privalov, V.Ye. (163). Gas ring laser for measuring angles and angular velocities. IN: Tr 9, 43-46. (RZhMekh, 8/77, 8B1336)

306. Prokopenko, V.T., V.S. Rondarev, A.V. Semenov, and A.D. Yas'kov (30). Studying the homogeneity of n-GaAs by a method of optical infrared introscopy. Zavodskaya laboratoriya, no. 8, 1977, 985.

307. Sadowski, M., and S. Ugniewski (NS). Plasma refraction measurements by means of a laser differential interferometer. JTP, no. 4, 1976, 365-371. (RZhRadiot, 7/77, 7Ye377)

308. Svitashov, K.K., A.I. Semenenko, L.V. Semenenko, and N.L. Shvarts (0). Ellipsometric measurements on rough germanium and silicon surfaces. OiS, v. 43, no. 1, 1977, 161-167.

309. Urbaniak, A. (NS). Observation of spin waves by scattering of laser light. Zeszyty naukowe Universytet Lodzkiej, ser. 2, no. 58, 1976, 73-78. (RZhF, 8/77, 8D1030)

310. Voytovich, A.P., and V.G. Dubovets (0). Effect of dispersion of the active medium on the intensity of lasing in a gas laser with a longitudinal magnetic field. ZhPS, v. 27, no. 1, 1977, 32-36.

311. Zastrogan, Yu.F. (0). Measuring small amplitudes of sinusoidal-shaped mechanical vibrations by laser interferometers with selective narrowband filters. IN: Sb 13, 15-24. (RZhRadiot, 8/77, 8Ye305)

312. Zhuravlev, V.A., O.V. Karpov, G.D. Petrov, and E.F. Yurchuk (140). Determining the parameters of a plasma by low-frequency fluctuations of scattered light. TVT, no. 4, 1977, 847-851.

313. Zuyev, V.A., and V.G. Popov (6). Using a laser to study the surface properties of semiconductors by means of photo EMF. IN: Sb 4, 53-62.

2. Laser-Excited Optical Effects

314. Aksenov, V.P., N.B. Volkov, B.G. Zhurkin, and I.G. Maksimchuk (1). Kinetics of cyclotron resonance and radiative recombination in pure Ge under laser excitation. IN: Tr 10, 83-85.

315. Aleksakhin, I.S., I.P. Zapesochnyy, and V.V. Suran (136). Process of multiphoton double ionization of the strontium atom. ZhETF P, v. 26, no. 1, 1977, 14-16.

316. Aleksandrovich, K.V., and I.A. Berezin (0). Determining the electron density by the self-reversed D_α deuterium line. OiS, v. 43, no. 1, 1977, 29-33.

317. Aliyev, M.R., D.N. Kozlov, and V.V. Smirnov (1). Coherent Raman spectroscopy with a high resolution in methane. ZhETF P, v. 26, no. 1, 1977, 31-34.

318. Anan'in, O.B., A.M. Baldin, Yu.D. Beznogikh, Yu.A. Bykovskiy, A.I. Govorov, L.P. Zinov'yev, Yu.P. Kozyrev, L.G. Makarov, V.A. Monchinskiy, I.K. Novikov, V.D. Peklenkov, A.M. Raspopin, and I.N. Semenyushkin (52). Achieving acceleration of carbon nuclei obtained in a laser injector at the synchrophasotron of the Joint Nuclear Research Institute. KE, no. 7, 1977, 1547-1549.

319. Arapov, A.P., A.I. Inyushin, V.V. Lyubchenko, V.R. Muratov, and V.M. Stepanov (0). Laser as a flash bulb for photography in darkness, using image amplifiers. ZhNiPFIK, no. 4, 1977, 253-256.

320. Avarmaa, R., and K. Mauring (0). Determining the parameters of a triplet state from fluorescence kinetics. IAN Est, no. 1, 1977, 92-95. (RZhF, 8/77, 8D844)

321. Balykin, V.I., V.I. Mishin, and V.A. Semchishen (72). Detection of small concentrations of I₂ vapor by laser excitation of fluorescence. KE, no. 7, 1977, 1556-1558.

322. Baykov, O.G., and V.G. Tuzov (7). Device for recording the spatial distribution of radiation intensity in a caustic. OMP, no. 7, 1977, 66-67.

323. Belyy, M.U., I.V. Zakharchenko, and B.A. Okhrimenko (51). Study of the spectral and luminescence kinetics of an HCl-Bi³⁺ solution. UFZh, no. 7, 1977, 1086-1089.

324. Bespalov, V.I., I.A. Batyрева, L.A. Dmitrenko, V.V. Korolikhin, S.P. Kuznetsov, and N.A. Novikov (8). Study of light absorption in the near IR range in partially deuterated KDP and α -HIO₃ crystals. KE, no. 7, 1977, 1563-1566.

325. Bonch-Bruyevich, A.M., B.A. Raykhman, and V.N. Smirnov (0). Spectrum of absorption fluctuations of GaAs near the absorption edge in a pulsed CO₂ laser radiation field. FTP, no. 8, 1977, 1622-1624.

326. Borshch, V.V., M.P. Lisitsa, P.Ye. Mozol', and I.V. Fekeshgazi (6). Photoconductivity of ZnP₂ at high excitation levels. IN: Sb 6, 60-66.

327. Bumyalene, S., and L. Klimka (50,433). Shortwave quenching of photoconductivity in copper-compensated germanium in an electric field. FTP, no. 7, 1977, 1327-1330.

328. Gadomskiy, O.N., and V.R. Nagibarov (214). Relativistic theory of the interaction of atoms in superradiance processes. IN: Tr 5, 3-47. (RZhF, 8/77, 8D1104)

329. Gavrilenko, V.I., V.L. Kononenko, T.S. Mandel'shtam, V.N. Murzin, and S.A. Saunin (1). Experimental detection of magnetodipole resonances in electron-hole droplets in germanium. ZhETF P, v. 26, no. 2, 1977, 102-106.

330. Gayzhauskas, E., I.A. Poluektov, and Yu.M. Popov (1). Coherent two-photon interaction of laser radiation with Frenkel excitons. KE, no. 7, 1977, 1578-1581.

331. Gorban', A.P., V.G. Litovchenko, V.G. Popov, and A.A. Serba (6). Photoelectric characteristics of photocells with a surface channel. FTP, no. 7, 1977, 1400-1403.

332. Gorchakov, V.I., and V.N. Sazonov (1). Using harmonic power to calculate frequency swing in a nonlinear oscillator. KE, no. 8, 1977, 1673-1680.

333. Hofmann, C. (NS). Determining the micro- and macroheterogeneities as well as the chemical and laser radiation stability of optical glass. Jenaer Rundschau, no. 1, 1977, 29-35. (RZhRadiot, 8/77, 8Ye316)

334. Ivanov, S.N., G.N. Kulipanov, I.N. Luchnik, V.V. Mikhaylin, V.B. Khlestov, and A.V. Khudyakov (0). Vacuum UV luminescence in oxides under excitation by synchrotron radiation in the X-ray region of the spectrum. IAN Fiz, no. 7, 1977, 1326-1329.

335. Kabanov, G.L., V.A. Nikolayev, A.I. Pavlov, and I.N. Sliukov (0). Radiation source based on an optical discharge in xenon. PTE, no. 4, 1977, 222-224.

336. Kolomeyev, M.P., P.N. Svirkunov, and S.S. Khmelevtsev (220). New diffraction effect: anomalous diffraction of grazing electromagnetic waves by a plane boundary of transparent dielectrics. ZhETF P, v. 26, no. 3, 1977, 153-156.

337. Kostyshin, M.T., and V.I. Min'ko (6). Evidence of noninterchangeability in the action of c-w laser radiation on a light-sensitive PbI_2 -Ag system. ZhNiPFIK, no. 4, 1977, 294-296.

338. Lisitsa, M.P., N.R. Kulish, and A.V. Stolyarenko (6). Using the phenomenon of free carrier accumulation by deep centers to measure the coefficient of two-photon absorption. IN: Sb 4, 62-68.

339. Lisitsa, M.P., G.G. Tsebulya, and S.F. Terekhova (6). Temperature dependence of exciton photoreflection spectra of p-ZnTe and n-CdTe single crystals. IN: Sb 4, 72-74.

340. Manenkov, A.A., V.A. Milyayev, G.N. Mikhaylova, V.A. Sanina, and A.S. Seferov (1). High-frequency breakdown of excitons and the kinetics of free carriers and excitons in germanium in the presence of electron-hole droplets. IN: Tr 10, 39-44.

341. Manenkov, A.A. (1). Using SHF methods to study the condensation of excitons in semiconductors. IN: Tr 10, 59-65.

342. Manenkov, A.A., G.N. Mikhaylova, A.S. Seferov, and V.D. Chernetskiy (1). Study of the effects of superheating in samples of germanium under the action of laser radiation in liquid helium. IN: Tr 10, 75-82.

343. Marmur, I.Ya., and Ya.A. Oksman (0). Positive feedback in wide-zone diode IR-detectors. FTP, no. 7, 1977, 1297-1301.

344. Medvid', A.P. (428). Bipolar effect of optical drag in current carriers in semiconductors. IAN Lat, no. 4, 1977, 78-84.

345. Mikhaylova, G.N. (1). SHF breakdown and condensation of excitons in Ge. IN: Tr 10, 5-38.

346. Mikhaylova, G.V. (0). All-Union seminar-conference on gases in metals. Zavodskaya laboratoriya, no. 1, 1977, 119-120.

347. Moskalenko, S.A., A.Kh. Rotaru, V.A. Sinyak, and P.I. Khadzhi (44). Self-induced transparency in the exciton region of the spectrum. FTT, no. 7, 1977, 2172-2177.

348. Nozdrin, V.V., I.A. Pan'shin, and Ye.A. Podpalyy (308). Sensitometry of thin-film magnetic optical image recorders. ZhNIPFiK, no. 4, 1977, 276-279.

349. Ozols, A.O. (63). Anisotropy of photorefraction in LiNbO_3 crystals. IAN Lat, no. 4, 1977, 46-51.

350. Rozhdestvenskaya, N.B., E.N. Gorbacheva, and A.N. Ryabinin (0). Determining the coefficient of scattering of benzine and chloroform by an absolute method. OiS, v. 42, no. 4, 1977, 656-661. (RZhF, 8/77, 8D1042)

351. Sheloput, T.A., D.V. Sheloput, and V.F. Glushkov (7). Photoelastic properties of various chalcogenide glasses. OMP, no. 7, 1977, 40-41.

352. Shitova, E.V., I.A. Yasneva, and N.A. Genkina (0). Optical properties of Si_3N_4 films. OiS, v. 43, no. 2, 1977, 244-248.

353. Slivka, V.Yu., V.S. Gerasimenko, A.S. Knyazev, and M.I. Golovey (0). Vibrational spectra of proustite $(\text{Ag}_3\text{AsS}_3)$ crystals. OiS, v. 43, no. 2, 1977, 249-251.

354. Valyanskiy, S.I., V.A. Milyayev, G.N. Mikhaylova, and A.B. Fradkov (1). He^3 cryostat for studying excitons in germanium at temperatures below 1 K. IN: Tr 10, 66-74.

355. Vinokurov, V.A., S.S. Klyago, Yu.N. Polivanov, and K.A. Prokhorov (1). Raman light scattering by polaritons in a paratellurite crystal. KE, no. 7, 1977, 1602-1604.

356. Volkov, L.A., F.P. Kesamanly, V.F. Kovalenko, I.Ye. Maronchuk, and L.G. Shepel' (432). Luminescence properties of variable-composition $\text{In}_{1-x}\text{Ga}_x\text{P}$ solid solutions. FTP, no. 7, 1977, 1242-1246.

357. Wroż, T. (NS). Determination of effective anisotropy of the optical polarizability for two-component solutions, using an He-Ne laser. Optica applicata [Poland], no. 2, 1976, 59-63. (RZhF, 8/77, 8D1041)

358. Zubov, B.V., A.A. Manenkov, V.A. Milyayev, G.N. Mikhaylova, T.M. Murina, A.M. Prokhorov, and A.S. Seferov (1). Study of condensation of excitons in Ge by methods of SHF breakdown of excitons and luminescence during single-photon and two-photon excitation of carriers. IN: Tr 10, 45-50.

359. Zubov, B.V., A.A. Manenkov, V.A. Milyayev, G.N. Mikhaylova, T.M. Murina, V.A. Sanina, and A.S. Seferov (1). SHF absorption by nonequilibrium current carriers in germanium. Method for determining the concentration of carriers. IN: Tr 10, 51-58.

J. BEAM-TARGET INTERACTION

1. Metal Targets

360. Antonov, A.A., G.I. Kozlov, V.A. Kuznetsov, and V.A. Masyukov (17). Stationary laser crater caused by interaction of high-power c-w CO₂ laser radiation with metal and liquid. KE, no. 8, 1977, 1747-1753.

361. Dymshits, Yu.I. (0). Characteristics of the reflection of intense radiation from thin metal films. ZhTF, no. 7, 1977, 1563-1564.

362. Gagarin, A.P., I.N. Ivanova, M.N. Libenson, and S.D. Pudkov (0). Variation in the reflective properties of a metal under the action of a high-power optical flux. ZhTF, no. 7, 1977, 1523-1528.

363. Grigorov, D.Z. (Bulgarian). Heating a two-film structure by laser radiation. FiKhOM, no. 4, 1977, 14-22.

364. Kokora, A.N., A.A. Zhukov, and L.Z. Epshteyn (0). Using c-w laser radiation for surface hardening of pig iron with compact inclusions of graphite. FiKhOM, no. 4, 1977, 23-26.

365. Kononenko, V.G., and A.K. Yemets (34). Destruction of metal foils by a pulsed laser in the presence of a plasma cloud. UFZh, no. 8, 1977, 1378-1380.

366. Kovalenko, V.S., V.S. Chernenko, and L.F. Golovko (0). Characteristics of plane hardening of materials by laser. EOM, no. 4, 1977, 47-49.

367. Metev, S.M., V.P. Veyko, K.V. Stamenov, and Kh.A. Kalev (Bulgarians). Experimental study of laser damage to thin metal films by the quartz resonator method. KE, no. 7, 1977, 1529-1536.

368. Popov, Ye.G., S.K. Tsvetayev, and V.Yu. Kurov (118). Recording pressure pulses during the action of laser radiation on metals. IN: Tr 11, 169-173. (RZhRadiot, 8/77, 8Ye323)

369. Rykalin, N.N., A.A. Uglov, and M.M. Nizametdinov (22). Calculating the heating of materials by laser radiation, taking into account the temperature dependence of thermophysical coefficients. KE, no. 7, 1977, 1509-1516.

370. Shilov, Yu.I. (0). A "bleaching wave" occurring from the action of pulsed laser radiation on an aluminum target, and the conditions of its existence. FTT, no. 7, 1977, 1966-1968.

2. Dielectric Targets

371. Yemel'yanova, G.M., T.F. Ivanova, M.P. Votinov, V.M. Ovchinnikov, B.D. Piterkin, and Z.A. Smirnova (0). Optical transparency of copolymers of methylmethacrylate with butylacrylate. ZhTF P, no. 14, 1977, 687-690.

3. Semiconductor Targets

372. Oksman, Ya.A., and A.A. Semenov (0). Beam erosion of semi-isolating GaAs. ZhTF P, no. 16, 1977, 838-841.

4. Miscellaneous Studies

373. Busygin, A.I., A.A. Nevzorov, and B.Sh. Ul'masbayev (118). Mass-spectral analysis of laser-vaporized solid-state materials. IN: Tr 11, 150-158. (RZhRadiot, 8/77, 8Ye322)

374. Bykovskiy, Yu.A., A.G. Dudoladov, V.P. Kozlenkov, and P.A. Leont'yev (16). Possibility of obtaining epitaxial thick films of semiconductor compounds by means of laser radiation. ZhTF, no. 8, 1977, 1798-1799.

375. Didyk, L.A., and N.I. Ovchinnikov (0). Modeling of thermoconverter heating by a laser beam. IN: Sb 1, 136-139. (RZhF, 8/77, 8D1412)

376. Gaponov, S.V., Ye.B. Klyuyenkov, B.A. Nesterov, N.N. Salashchenko, and M.I. Kheyfets (0). Laser sputtering of films in an active medium. ZhTF P, no. 13, 1977, 632-635.

377. Gaponov, S.V., B.M. Luskin, B.A. Nesterov, and N.N. Salashchenko (297). Possibility of preparing uniform hyperfine single-crystal films by a laser operating in a millisecond pulse regime. ZhTF P, no. 16, 1977, 799-801.

378. Jiskra, J. (NS). Methods and possibilities of using CO₂ lasers in technology. Slaboproudny obzor, no. 1, 1977, 30-39. (RZhRadiot, 7/77, 7Ye399)

379. Nemchinov, I.V., and V.V. Svetsov (0). Calculating the development of a laser explosion in air, allowing for radiation. ZhPMTF, no. 4, 1977, 24-32.

380. Pazderskiy, V.A. (227). Positron annihilation in a strong electromagnetic field. IVUZ Fiz, no. 7, 1977, 142-143.

381. Peschel, C., G. Thiede, H. Orzegowski, and A. Wiemer (NS).
Device for distributing the radiation energy of a gas laser.
Patent GDR, no. 119915, issued 12 June 1976. (RZhRadiot, 7/77, 7Ye401)

382. Vorob'yev, P.A., V.M. Mizin, and N.V. Timokhovich (0). The role of highly excited states of molecules in the process of laser destruction of phthalocyanine dyes. OiS, v. 43, no. 2, 1977, 386-387.

383. Zon, B.A. (0). Drag effect during collisions of electrons with atoms.
ZhETF, v. 73, no. 1, 1977, 128-133.

K. PLASMA GENERATION AND DIAGNOSTICS

384. Abramov, V.A., V.S. Lisitsa (23). Determining the concentration of impurities in a hot plasma according to the laser fluorescence linewidth.
Fizika plazmy, no. 4, 1977, 799-804.

385. Ageyev, V.P., V.I. Konov, A.S. Silenok, and N.I. Chapliyev (1).
Shock mechanism of laser heating of targets in gases. ZhTF P, no. 14, 1977, 677-680.

386. Andreyev, A.A., and V.A. Gorbunov (0). Absorption of a laser beam in a radially inhomogeneous plasma. ZhTF P, no. 16, 1977, 812-815.

387. Anisimov, S.I., M.F. Ivanov, N.A. Inogamov, P.P. Pashinin, and A.M. Prokhorov (1,73). Numerical modeling of processes of laser compression and heating of simple shell targets. Fizika plazmy, no. 4, 1977, 723-732.

388. Denus, S., J. Farny, Z. Wereszczynski, J. Wolowski, and E. Woryna (NS).
Application of ion diagnostics for the study of plasma produced by a
laser beam focused on Z>5 targets. JTP, no. 1, 1977, 25-43.
(RZhF, 8/77, 8G337)

389. Denus, S., J. Farny, Z. Wereszczynski, J. Wolowski, and E. Woryna (NS).
Using ion diagnostics to study a plasma produced by a laser focus on a
Z>5 target. BWAT, no. 2, 1977, 121-141. (RZhF, 8/77, 8G335)

390. Fanchenko, S.D. (0). International Conference of Experts of the
International Atomic Energy Agency on Inertial Confinement of Plasma,
Dubna, 19-23 July 1976. Fizika plazmy, no. 4, 1977, 932-934.

391. Farkas, Gy., and Z.Gy. Horvath (NS). Plasma production in a strong
static electric field by mode-locked laser pulse trains. Kozponti
fizikai kutate intezet (Publs), no. 84, 1976, 8 p. (RZhF, 8/77, 8G301)

392. Gamaliy, Ye.G., S.Yu. Sus'kov, and N.M. Sobolevskiy (1). Neutron
diagnostics of a dense thermonuclear plasma. IN: Tr 12, 10-20.

393. Gamaliy, Ye.G., A.I. Gromov, A.I. Isakov, L.A. Krupinina, Yu.S. Leonov,
F.I. Mateyeva, Yu.A. Merkul'yev, A.I. Nikitenko, Ye.R. Rychkova, and
G.V. Sklizkov (1). Laser thermonuclear targets. IN: Tr 12, 29-60.

394. Isakov, A.I. (1). Modern development of neutron physics as related to
the development of new high-power pulsed sources of neutrons. IN: Tr 12,
3-9.

395. Kaliski, S. (NS). Explosion compression of plasma up to critical values of thermonuclear microfusion. Part 1. JTP, no. 1, 1977, 3-10.
(RZhRadiot, 8/77, 8Ye380)

396. Kaliski, S. (NS). Explosion compression of plasma up to critical values of thermonuclear microfusion. Part 2. JTP, no. 1, 1977, 11-16.
(RZhRadiot, 8/77, 8Ye381)

397. Kaliski, S. (NS). Possibility of generating singular densities during concentric compression of plasma. JTP, no. 1, 1977, 17-23.
(RZhRadiot, 8/77, 8Ye331)

398. Kaliski, S. (NS). Profiled, cylindrical explosion-laser compression up to superhigh densities. JTP, no. 1, 1977, 75-80. (RZhRadiot, 8/77, 8Ye383)

399. Kaliski, S. (NS). Laser-driven D-T compression with a profiled, explosion-induced precompression. JTP, no. 1, 1977, 113-119.
(RZhRadiot, 8/77, 8Ye379)

400. Kaliski, S. (NS). Hitting high-speed targets by laser beams. JTP, no. 1, 1977, 121-127. (RZhRadiot, 8/77, 8Ye344)

401. Kaliski, S. (NS). Laser compression of a D-T mixture with an explosive profiled precompression. BWAT, no. 2, 1977, 3-10. (RZhRadiot, 8/77, 8Ye384)

402. Nastoyashchiy, A.F. (23). Ionization instability of a plasma in a laser radiation field. Fizika plazmy, no. 4, 1977, 752-757.

403. Polyanichev, A.N., V.T. Tikhonchuk, and V.S. Fetisov (1).
Hydiodynamics of a parametrically absorbing laser plasma during spherical symmetrical disintegration. Fizika plazmy, no. 4, 1977, 743-751.

404. Serdyuchenko, Yu.N., V.K. Chevokin, and M.Ya. Shchelev (1).
Electrooptic chambers for laser and laser plasma diagnostics.
Fizicheskiy institut AN SSSR. Fizika plazmy. Preprint, no. 29, 1977, 35 p. (RZhF, 8/77, 8D1725)

405. Volobuyev, I.V., D.N. Gorbunov, B.V. Granatkin, and A.I. Isakov (1).
Detectors of neutrons from a short-lived plasma. IN: Tr 12, 21-28.

406. Zakharenkov, Yu.A., O.N. Krokhin, V.V. Pustovalov, V.P. Silin, G.V. Sklizkov, A.N. Starodub, V.T. Tikhonchuk, and A.S. Shikanov (1).
Interferometric study of the corona of a laser plasma under the action of a heating pulse. Fizika plazmy, no. 4, 1977, 733-742.

III. MONOGRAPHS, BOOKS, CONFERENCE PROCEEDINGS

407. Arbuzov, V.A., Ye.I. Zakharova, A.N. Papyrin, V.A. Smirnykh, R.I. Soloukhin, and A.I. Ukolov (46). Optika i atomnaya fizika (Optics and atomic physics). Novosibirsk, Nauka, 1976, 456 p.

408. Grankin, V.Ya., N.A. Tanin, M.T. Nesterenko, and V.N. Makukhin (0). Lazernoye izlucheniye (Laser radiation). Moskva, Voenizdat, 1977, 192 p.

409. Impul'snyye neytronnyye issledovaniya (Pulsed neutron studies). Fizicheskiy institut AN SSSR. Trudy, no. 94, 1977, 104 p.

410. Issledovaniye kondensatsii eksitonov v germanii metodami SVCh (Study of condensation of excitons in germanium by SHF methods). Fizicheskiy institut AN SSSR. Trudy, no. 100, 1977, 88 p.

411. Luk'yanov, D.P., and V.Ye. Privalov (0). Primeneniye kol'tsevykh gazovykh lazerov v izmeritel'noy tekhnike (Use of gas ring lasers in measuring technology). Leningradskiy dom nauchno-tehnicheskoy propagandy. Seriya Progressivnyye metody obrabotki metallov i splavov. 1977, 23 p. (KL, 34/77, 29079)

412. Materialy i ustroystva kvantovoy radiofiziki (Materials and devices for quantum radiophysics). Fizicheskiy institut AN SSSR. Trudy, no. 98, 1977, 164 p.

413. Mayorov, S.A., and I.M. Nagibina, eds. (30). Golograficheskiye metody khraneniya i obrabotki tsifrovoy informatsii (Holographic methods for storing and processing digital information). Leningradskiy institut tochnoy mekhaniki i optiki. Trudy, no. 87, 1976, 77 p. (KL, 29/77, 24862)

414. Rasseyaniye i refraktsiya opticheskikh voln v atmosfere (Scattering and refraction of optical waves in the atmosphere). Institut optiki atmosfery SOAN, Tomsk, 1976, 183 p. (RZhF, 8/77, 8D1075)

415. Svetovoye i zvukovoye sverkhizlucheniye (Optical and acoustic superradiance). Kazanskiy gosudarstvennyy pedagogicheskiy institut. Ucheniye zapiski, no. 163, 1976, 196 p. (RZhF, 8/77, 8D1103)

416. Wagner, Ye.T., A.A. Mitrofanov, and V.N. Barkov (0). Lazernyye i opticheskiye metody kontrolya v samoletostroyenii (Laser and optical monitoring methods in aircraft manufacture). Moskva, Mashinostroyeniye, 1977, 176 p.

417. Vynuzhdennoye kombinatsionnoye rasseyaniye sveta (Stimulated Raman scattering). Fizicheskiy institut AN SSSR. Trudy, no. 99, 1977, 176 p.

418. Yaroslavskiy, L.P., and N.S. Merzlyakov (201). Metody tsifrovoy golografii (Methods of digital holography). Moskva, Nauka, 1977, 192 p.

419. Zakharov, V.M., and O.K. Kostko (0). Meteorologicheskaya lazernaya lokatsiya (Meteorological lidar). Leningrad, Gidrometeoizdat, 1977, 224 p.

420. Zemskov, G.G., and V.A. Savel'yev (0). Sredstva izmereniya lineynykh razmerov s ispol'zovaniyem opticheskikh kvantovykh generatorov (Means for measuring linear dimensions using lasers). Moskva, Mashinostroyeniya, Biblioteka priborostroitelya, 1977, 88 p.

IV. SOURCE ABBREVIATIONS

(CIRC Codens)

BWAT	(BWATA)	Biuletyn Wojskowej akademii technicznej J. Dabrowskiego
DAN B	(DBLRA)	Akademiya nauk Belorusskoy SSR. Doklady
DAN SSSR	(DANKA)	Akademiya nauk SSSR. Doklady
EOM	(EOBMA)	Elektronnaya obrabotka materialov
FAiO	(IFAOA)	Akademiya nauk SSSR. Izvestiya. Fizika atmosfery i okeana
FGiV	(FCVZA)	Fizika gorenija i vzryva
FiKhOM	(FKOMA)	Fizika i khimiya obrabotka materialov
FTP	(FTPPA)	Fizika i tekhnika poluprovodnikov
FTT	(FTVTA)	Fizika tverdogo tela
IAN Arm	(IAAFA)	Akademiya nauk Armyanskoy SSR. Izvestiya. Fizika
IAN Est	(ETFMB)	Akademiya nauk Estonskoy SSR. Izvestiya. Fizika, matematika
IAN Fiz	(IANFA)	Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya
IAN Lat	(LZFTA)	Akademiya nauk Latviyskoy SSR. Izvestiya. Seriya fizicheskikh i tekhnicheskikh nauk
IT	(IZTEA)	Izmeritel'naya tekhnika
IVUZ Fiz	(IVUFA)	Izvestiya vysshikh uchebnykh zavedeniy. Fizika
IVUZ Priboro	(IVUBA)	Izvestiya vysshikh uchebnykh zavedeniy. Priborostroyeniye
IVUZ Radioelektr	(IVUZB)	Izvestiya vysshikh uchebnykh zavedeniy. Radioelektronika
IVUZ Radiofiz	(IVYRA)	Izvestiya vysshikh uchebnykh zavedeniy. Radiofizika
JTP	(JTPHD)	Journal of Technical Physics [Poland]
KE	(KVEKA)	Kvantovaya elektronika
KhVE	(KHVKA)	Khimiya vysokikh energiy
KL	(KNLTA)	Knizhnaya letopis'
KSpF	(KRSFA)	Kratkiye soobshcheniya po fizike

NM	(IVNMA)	Akademiya nauk SSSR. Izvestiya. Neorganicheskiye materialy
OIS	(OPSPA)	Optika i spektroskopiya
OMP	(OPMPA)	Optiko-mekhanicheskaya promyshlennost'
Otkr izobr	(OIPOB)	Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki
PTE	(PRTEA)	Pribory i tekhnika eksperimenta
R1E	(RAELA)	Radiotekhnika i elektronika
RZhF	(RZFZA)	Referativnyy zhurnal. Fizika
RZhGeofiz	(RZGFA)	Referativnyy zhurnal. Geofizika
RZhMekh	(RZMKA)	Referativnyy zhurnal. Mekhanika
RZhRadiot	(RZRAB)	Referativnyy zhurnal. Radiotekhnika
Sb1		Sbornik. Tekhnicheskaya elektronika i elektrodinamika, no. 1, Saratov, 1976.
Sb2		Vsesoyuznaya konferentsiya "Optika lazerov." 1st. Leningrad, 4-8 January 1977. Tezisy dokladov. Leningrad, 1976 [sic].
Sb3		Aerofizicheskiye issledovaniya, no. 6, Novosibirsk, 1976.
Sb4		Kvantovaya elektronika, no. 12, Kiyev, Naukova dumka, 1977.
Sb5		Itogi nauki i tekhniki. Radiotekhnika, no. 12, Moskva, 1977.
Sb6		Kvantovaya elektronika, no. 13, Kiyev, Naukova dumka, 1977.
Sb7		Vsesoyuznaya akusticheskaya konferentsiya. 9th. Moskva, 1977.
Sb8		Informatsionnyye materialy po gidrometeorologicheskim priboram i metodam nablyudeniy, no. 67, Moskva, Gidrometeoizdat, 1976.
Sb9		Informatsionnyye materialy po gidrometeorologicheskim priboram i metodam nablyudeniy, no. 68, Moskva, Gidrometeoizdat, 1976.
Sb10		Rasseyaniye i refraktsiya opticheskikh voln v atmosfere. Tomsk, 1976.
Sb11		Issledovaniya po elektrodinamike i rasprostraneniyu elektromagniticheskikh voln. Tomsk. Tomskiy universitet, 1977.

Sb12 Khimiya plazmy, no. 4, Moskva, Atomizdat, 1977.
 Sb13 Pribory tochnoy mekhaniki, no. 1, Moskva, 1976.
 TKiT (TKTEA) Tekhnika kino i televideniya
 Tr1 AN SSSR. Fizicheskiy institut. Trudy, no. 98, 1977.
 Tr2 Moskovskiy fiziko-tehnicheskiy institut. Trudy. Seriya Obshcheniya i molekulyarnaya fizika, no. 8, 1976.
 Tr3 Khar'kovskiy universitet. Vestnik, no. 151, radiofizika i elektronika, no. 6, 1977.
 Tr4 AN SSSR. Fizicheskiy institut. Trudy, no. 99, 1977.
 Tr5 Kazanskiy gos pedagogicheskiy institut. Uchenyye zapiski, no. 163, 1976.
 Tr6 Tomskiy politekhnicheskiy institut. Izvestiya, no. 296, 1976.
 Tr7 Leningradskiy korablestroitel'skiy institut. Trudy, no. 110, 1976.
 Tr8 Moskovskiy energeticheskiy institut. Trudy, no. 306, 1976.
 Tr9 Trudy metrologicheskikh institutov SSSR. VNII metrologii, no. 206(266), 1977.
 Tr10 AN SSSR. Fizicheskiy institut. Trudy, no. 100, 1977.
 Tr11 Moskovskiy fiziko-tehnicheskiy institut. Trudy. Seriya Radiotekhnika i elektronika, 1976(1977).
 Tr12 AN SSSR. Fizicheskiy institut. Trudy, no. 94, 1977.
 TVT (TVYTA) Teplofizika vysokikh temperatur
 UFN (UFNAA) Uspekhi fizicheskikh nauk
 UFZh (UFIZA) Ukrainskiy fizicheskiy zhurnal
 VMU (VMUFA) Moskovskiy universitet. Vestnik. Seriya fizika, astronomiya
 ZhETF (ZEIFA) Zhurnal eksperimental'noy i teoreticheskoy fiziki
 ZhETF P (ZFPRA) Pis'ma v Zhurnal eksperimental'noy i teoreticheskoy fiziki
 ZhNiPFIK (ZNPFA) Zhurnal nauchnoy i prikladnoy fotografii i kinematografii
 ZhPMTF (ZPMFA) Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki
 ZhPS (ZPSBA) Zhurnal prikladnoy spektroskopii
 ZhTF (ZTEFA) Zhurnal tekhnicheskoy fiziki
 ZhTF P (PZTFD) Pis'ma v Zhurnal tekhnicheskoy fiziki

V. AUTHOR AFFILIATION LIST

NS. Non-Soviet

0. Affiliation not given
1. Physics Institute im Lebedev, AN SSSR, Moscow (Fizicheskiy institut im Lebedeva AN SSSR).
2. Moscow State University (Moskovskiy gosudarstvennyy universitet).
3. Institute of Physics, AN BSSR, Minsk (Institut fiziki AN BSSR).
4. Physicotechnical Institute im Ioffe, Leningrad (Fiziko-tehnicheskiy institut im Ioffe).
5. Institute of Physics, AN UkrSSR, Kiev (Institut fiziki AN UkrSSR).
6. Institute of Semiconductors, AN UkrSSR, Kiev (Institut poluprovodnikov AN UkrSSR).
7. State Optical Institute im Vavilov, Leningrad (Gosudarstvennyy opticheskiy institut im Vavilova).
8. Radiophysics Scientific Research Institute at Gorkiy State University (Nauchno-issledovatel'skiy institut pri Gor'kovskom gos universitete).
10. Institute of Semiconductor Physics of the Siberian Branch, AN SSSR, Novosibirsk (Institut fiziki poluprovodnikov SOAN).
12. Leningrad State University (Leningradskiy gos universitet).
13. Institute of Crystallography, AN SSSR, Moscow (Institut kristallografiya AN SSSR).
15. Institute of Radio Engineering and Electronics, AN SSSR, Moscow (Institut radiotekhniki i elektroniki AN SSSR).
16. Moscow Engineering Physics Institute (Moskovskiy inzhenerno-fizicheskiy institut).
17. Institute of Mechanical Problems, AN SSSR, Moscow (Institut problem mekhaniki AN SSSR).
19. Moscow Power Engineering Institute (Moskovskiy energeticheskiy institut).
21. Acoustics Institute, AN SSSR, Moscow (Acusticheskiy institut AN SSSR).
22. Institute of Metallurgy im Baykov, Moscow (Institut metallurgii im Baykova).
23. Institute of Atomic Energy im Kurchatov, Moscow (Institut atomnoy energii im Kurchatova).
24. Moscow Higher Technical College im Bauman (Moskovskoye vyssheye tekhnicheskoye uchilishche im Baumana).
30. Leningrad Institute of Precision Mechanics and Optics (Leningradskiy institut tochnoy mekhaniki i optiki).
34. Khar'kov State University (Khar'kovskiy gos universitet).
37. Yerevan State University (Yerevanskiy gos universitet).
44. Institute of Applied Physics, AN MSSR, Kishinev (Institut prikladnoy fiziki AN MSSR).
46. Novosibirsk State University (Novosibirskiy gos universitet).
49. Vilnyus State University (Vil'nyusskiy gos universitet).
50. Institute of Semiconductor Physics, AN LitSSR, Vilnyus (Institut fiziki poluprovodnikov AN LitSSR).
51. Kiev State University (Kiyevskiy gos universitet).
52. Joint Institute of Nuclear Research, Dubna (Ob'yedinennyi institut yadernykh issledovaniy).
61. Institute of Physics and Astronomy, AN EstSSR (Institut fiziki i astronomii AN EstSSR).
63. Institute of Physics, AN LatSSR (Institut fiziki AN LatSSR).
64. Institute of Atmospheric Physics, AN SSSR (Institut fiziki atmosfery AN SSSR).
72. Institute of Spectroscopy, AN SSSR (Institut spektroskopii AN SSSR).
73. Institute of Theoretical Physics im Landau, AN SSSR (Institut teoreticheskoy fiziki im Landau AN SSSR).

74. Institute of High Temperatures, AN SSSR (Institut vysokikh temperatur AN SSSR).
75. Institute of Automation and Electronic Measurements, Siberian Branch AN SSSR (Institut avtomatiki i elektrometrii SOAN).
76. Institute of Hydrodynamics, Siberian Branch AN SSSR (institut gidrodinamiki SOAN).
77. Institute of Inorganic Chemistry, Siberian Branch AN SSSR (Institut neorganicheskoy khimii SOAN).
78. Institute of Atmospheric Optics, Siberian Branch AN SSSR (Institut optiki atmosfery SOAN).
79. Institute of Nuclear Physics, Siberian Branch AN SSSR (Institut yadernoy fiziki SOAN).
84. Institute of Radiophysics and Electronics, AN UkrSSR (Institut radiofiziki i elektroniki AN UkrSSR).
87. Belorussian State University (Belorusskiy gos universitet).
90. Electrotechnical Institute of Communications (Elektrotekhnicheskiy institut svyazi).
92. Physicochemical Institute im Karpov (Fiziko-khimicheskiy institut im Karpova).
94. Gor'kiy State University (Gor'kovskiy gos universitet).
98. Institute of Nuclear Physics at Moscow State University (Institut yadernoy fiziki pri Moskovskom gos universitete).
99. Institute of Mechanics and Physics, Saratov (Institut mehaniki i fiziki).
110. Leningrad Electrotechnical Institute (Leningradskiy elektrotekhnicheskiy institut).
114. L'vov State University (L'vovskiy gos universitet).
118. Moscow Physicotechnical Institute (Moskovskiy fiziko-tehnicheskiy institut).
129. Siberian State Scientific Research Institute of Metrology (Sibirskiy gos NII metrologii).
136. Uzhgorod State University (Uzhgorodskiy gos universitet).
137. Voronezh State University (Voronezhskiy gos universitet).
140. All Union Scientific Research Institute of Physicotechnical and Radiotechnical Measurements (VNII fiziko-tehnicheskikh i radio-tehnicheskikh izmereniy, VNIFTRI).
141. All Union Scientific Research Institute of Opticophysical Measurements (VNII optiko-fizicheskikh izmereniy).
149. Leningrad Shipbuilding Institute (Leningradskiy korablestroitel'nyy institut).
160. Scientific Research Institute of Hydrometeorological Instrument Manufacture (NII gidrometeorologicheskogo priborostroyeniya).
161. Moscow Institute of Radio Engineering, Electronics and Automation (Moskovskiy institut radiotekhnika, elektroniki i avtomatiki).
163. All Union Scientific Research Institute of Metrology im Mendeleyev (VNII metrologii im Mendeleyeva).
174. Scientific Research Institute of Organic Intermediates and Dyestuffs, Moscow (NII organiceskikh poluproduktov i krasiteley).
177. Riga Institute for Civil Aviation Engineers (Rizhskiy institut inzhenerov grazhdanskoy aviatsii).
197. Tomsk Polytechnic Institute (Tomskiy politekhnicheskiy institut).
201. Institute for Problems of Information Transmission, AN SSSR, Moscow (Institut problem peredachi informatsii AN SSSR).
210. Institute of Physics, Siberian Branch AN SSSR (Institut fiziki SOAN).
214. Kazan' Pedagogical Institute (Kazanskiy pedagogicheskiy institut).
215. Physicotechnical Institute, AN TadzhSSR (Fiziko-tehnicheskiy institut AN TadzhSSR).
220. Institute of Experimental Meteorology (Institut eksperimental'noy meteorologii).

227. Tashkent State University (Tashkentskiy gos universitet).
231. Scientific Research Institute of Motion Pictures and Photography (NI kinofotoinstitut)
295. Institute of Chemical Kinetics and Combustion, Siberian Branch AN SSSR, Novosibirsk (Institut khimicheskoy kinetiki i goreniya SOAN).
297. Institute of Chemistry, AN SSSR, Gor'kiy (Institut khimii AN SSSR).
299. Institute of Electronics, AN BSSR (Institut elektroniki AN BSSR).
303. L'vov Branch of Mathematical Physics of the Institute of Mathematics, AN UkrSSR (L'vovskiy filial matematicheskoy fiziki Instituta matematiki AN UkrSSR).
308. Moscow Institute of Railroad Transport Engineers (Moskovskiy institut inzhenerov zheleznodorozhnogo transporta).
317. Saratov Polytechnic Institute (Saratovskiy politekhnicheskiy institut).
326. Institute of Radioelectronics, AN SSSR (Institut radioelektroniki AN SSSR).
327. Novosibirsk Electrotechnical Institute (Novosibirskiy elektrotekhnicheskiy institut).
427. Physics Power Institute, AN LatSSR (Fiziko-energeticheskiy institut AN LatSSR).
428. Riga Medical Institute (Rizhskiy meditsinskiy institut).
429. Scientific Research Institute of Labor Hygiene and Occupational Diseases, AMN SSSR, Moscow (NII gigiyeny truda i profzabolevaniy AMN SSSR).
430. Minsk Radio Engineering Institute (Minskiy radiotekhnicheskiy institut).
431. Institute of Applied Mechanics AN SSSR, Moscow (Institut prikladnoy mekhaniki AN SSSR).
432. Kirovograd State Pedagogical Institute im Pushkin (Kirovogradskiy gos pedagogicheskiy institut im Pushkina).
433. Vilnius Civil Engineering Institute (Vil'nyusskiy inzhenerno-stroitel'skiy institut).

AUGUSTINIAN

DUTOV A I	8	GARBUZOV D Z	15, 16	HEUMANN E	26	KARGAPOL TSEV V S	2
DYAD'KINA P	10	GAVRILENKO V I	49	HOFFMANN C	49	KARLOV N V	9, 21, 37
D'YAKOV YU YE	22	GAYZHAIUSKAS E	49	HORVATH Z GY	57	KARNAUKH N P	4
DYMSHITS B M	12	SELLER V M	7			KARPENKO S G	22
DYMSHITS YU I	53	GENKINA N A	52			KARPOV D V	46
DYUBKO S F	11	GERASIMENKO V S	19, 52			KARTASHOV O G	35
DZHOTYAN G P	22	GERSHENZON YU M	37			KASDOYEV S G	33
DZYURENKO M I	6	GINEVICH G R	6			KASPERCZUK A	1
		GLADUZHCHAK V I	10			KASYMOV SH S	38
		GLUSHNIKOV V F	52			KATTSEV M A	28
E		GNATOVSKIY A V	19, 35, 39			KAZAKOVA N A	9
EKONOMOV N A	36	GOUIK E E	18			KERIMOV O M	13
ELENKRIG B B	29	GOULEVSKIY A P	39			KESAMANLY F P	52
EPSHTEYN L Z	53	GOLDOVEY M I	52			KESLER L G	19
ESSEL'BAKH P B	10	GOLOVICH'EV V I	12			KHAZDZH P I	51
F		GOLOVIN V A	43			KHALFIN V R	18, 27
		GOLOVKO L F	54			KHEYFETS M I	55
		GONCHUKOV S A	43			KHIZHNYAKOV V	2
FANCHENKO S D	57	GORBACHEV O G M	43			KHLESTOV V B	49
FARKAS GY	57	GORBACHEVA E N	33, 51			KHMELEVITSEV S S	50
FARNY J	57	GOREBAN' A P	49			KHOKHLOV I V	28
FEDOROV G M	25	GORBUNOV D N	59			KHOKHLOV R V	25
FEDOROV V A	2	GORBUNOV O I	30			KHOLIN I V	8, 28
FEDULOV V M	30	GORBUNOV V A	56			KHOLODAP' G A	36
FEDYAYEV YU N	18	GORBUNOV V I	35			KHROMOV A V	39
FEKESHGAZI I V	25, 48	GORCHAKOV V I	49			KHROMYKH A M	45
FESENKO L D	11	GORDIYETS B F	14			KHRONOPULO YU G	22
FESHCHENKO V P	24	GORDOKHOV YU A	37			KHRYKIN V T	30
FETISOV V S	59	GOVOROV A I	47			KHUDYAKOV A V	49
FILATOV YU V	45	GRAMOLINA N O	44			KICHIGIN N A	1
FILIPPOV V I	4	GRANATKIN B V	59			KIKINESHIA A A	36
FLEGONTOV YU A	5	GRANKIN V YA	60			KIRSANOV B P	15
FLEISCHER M	18	GRASTUK A Z	10			KIRSANOV V P	4
FOMINSKIY L P	13	GRIF G I	7			KISELEV V A	29, 31
FRANKOV A B	52	GRIGOROV D Z	53			KITAYEV YU E	27
FRANKE K	18	GRIGOR'YAN G M	12			KIYAK S G	4
FREYDMAN G I	16	GRIGOR'YANTS V V	9			KLEMENT'YEV V M	21
FREYVERT K M	30	GRIGOR'YEV V M	29, 30			KLEPIKOVA N V	3
FURZIKOV N P	37	GRONOV A I	57			KLIMKA L	48
G		GRUZ E A	36			KLIMOV I I	8
		GUDEBA B S	5			KLIMOVSKIY I I	11
		GUIDZENKO L I	14			KLYAGO S S	52
		GULYAYEV YU V	29			KLYATSKIN V I	34
GAIOMSKIY O N	49	GURVICH A S	32			KLYUYENKOV YE B	55
GAGARIN A P	53	GUS'KOV N A	30			KAMINSKIY A A	1, 2
GALAKHOV N V	31	GYOZDEVA L G	12			KAMRIKOV A S	52
GALICH G A	20	GYRDDEV L L	33			KNAZAEV A S	7
GAMALIY YE G	57					KNAZAEVSKAYA G S	18
GANTZ I	18					KOCH E	42
GAPONOV S V	55					KOCHANOV V P	25
GAPONTSOV V P	5					KOCHARYAN L A	25
		HERMANN J	23				

KOCHELAP V A	14	KOZLOVSKIY D A	38	LAGUN V N	14
KOCHEMASOV G G	23	KOZUBOVSKIY V R	43	LUSKIN B M	55
KOCHETOV I V	9, 10, 12	KOZYREV YU P	47	LUTSIV R V	8
KOCHIKYAN R V	20	KRATIROV I A	17, 39	LYAMSHEV L M	12
KOGAN L M	15	KRAVCHENKO V B	5	LYAPIDEVSKIY V K	16
KOKOROV A N	53	KRAVCHENKO V I	17, 20, 27	LYUBCHENKO V V	3, 15
KOKTOROV I P	31		41, 44	LAVROV A V	12
KOLBYCHEVA P D	8	KRAVTSOV N V	2	LAVROV V N	3
KOLCHIN YE YE	28	KRAVTSOV V YE	39	LAZAREV V V	18
KOLMENSKIY AL A	25	KREBS A R	36	LEBEDEV V S	13
KOLOMEYEV M P	50	KRITSKIY A V	3	LEDENEVA G P	44
KOLOMNIKOV YU D	7	KROMKHIN O N	59	LEMERMAN G YU	11
KOLPAKOV YU G	21	KRSEK J	44	LEONOV YU S	57
KOLYSHKIN V I	3	KRUGLIK G S	45	LEONTOVICH A M	1, 15
KOMAROV V N	10	KRULIKOVSKIY B K	25	LEONT'YEV I A	13
KOMAROV YU A	44	KRUPA N N	3	LEONT'YEV P A	55
KOMPANETS I N	18, 27, 35	KRUPININA L A	57	LEONT'YEV V G	39
KONDILENKO YE I	23	KRUZHILIN YU I	4	LESNOY M A	11
KONDILENKO I I	32	KRYLOV V M	44	LETOKHOV V S	37, 38
KONDRAKOV V A	44	KRYNETSKIY B B	37	LEVASHKEVICH L V	1
KONEV YU B	9, 10, 21	KRYZHANOVSKIY V I	5	LEVIN M B	38
KONEVSKIY V S	1	KUBASOV A M	18	LEVIT A L	41
KONNIKOV S G	16	KUDRYAVTSEVA A D	23	LIBENSON M N	53
KONONENKO V G	53	KUKHAR' N R	35	LIBROVICH V B	14
KONONENKO V L	49	KUKHATAREV N V	36	LIPATOV N I	21
KONOV V I	56	KUKIBNYY YU A	14	LIS L	7
KONYUKOV V L	5	KULAKOV YU I	31	LISHCHINA T G	35
KOPYLOV YEA	43	KULEVSKIY L A	20, 21	LISITSA M P	25, 48, 50
KORETSKIY YA P	12	KULIKOV S V	13	LISITSA V S	56
KORMER S B	23	KULIPANOV G N	35, 49	LISITSYN V N	13
KOROBOV A M	6	KULISH N R	9, 50	LISITSYNA L I	7
KOROLIKHIN V V	48	KULYUK L L	22	LITSVIN V N	29
KOROTKOV P A	32	KUNTSIEVICH B F	9	LITOVCHENKO V G	49
KOSAREV I I	44	KUPCHENKO G A	3	LITVINOV L A	1
KOSOLODOV V N	30	KUPCHENKO L F	35	LITVINOV V F	2, 40
KOSOLOV V N	29	KUPRENYUK V I	8	LOBACHEV M I	40
KOSTIN V N	16	KUPRIYANOV S YE	10	LOBANOV A N	8
KOSTIKO K	32, 61	KURNOSOV V D	28	LOBOV S I	17
KOSTYSHIN M T	50	KUROV V YU	54	LOGINDOV A S	3
KOTLYACHKOV M I	34	KUSHIN V V	43	LOGINA L A	19
KOVALENKO V F	52	KUTAKHOV V P	18	LOGINOV A P	39
KOVALENKO V S	54	KUZ' MIN G P	21	LOKAY P	43
KOVALEV A A	1, 19	KUZNETSOV A I	26	LOPASOV V P	39
KOVALEVSKIY V I	36	KUZNETSOV S P	18	LOPUKHIN V V	16
KOVSH I B	13	KUZNETSOV V A	53	LOVINSKIY L S	40
KOZLENKO V P	55	KUZNETSOV V V	34	LOZOVSKIY P M	10
KOZLOV D N	33, 47	KUZYAKOV B A	9	LUCHNIK I N	49
KOZLOV G I	11, 53			LUGIN E V	32
KOZLOV N P	16			LUK'YANENKO S F	39
				LUK'YANOV D P	60
				MERKUL'YEV YU A	57

MERZLYAKOV N S	61	NEMCHINOV I V	55	PANOV O L	30	POPELA B	45
METEV S M	54	NERSIYAN S TS	20	PAN'SHIN I A	51	POPOV A A	35
MIKHALEVICH V G	25	NEVIC D	30	PAPAZYAN T A	24	POPOV A I	7
MIKHAYLIN V V	49	NESTERENKO M T	60	PAPYRIN A N	41, 60	POPOV N I	20
MIKHAYLOVA G N	50, 51, 52, 53	NESTEROV B A	55	PARTISKIY L G	38	POPOV V G	46, 49
MIKHAYLOVA G V	51	NESTEROV Z V	30	PARKHOMENKO YU N	17	POPOV V K	33
MILINKEVICH A V	19	NEVSKIY L B	45	PASHININ P P	56	POPOV YEG	54
MILOVSKIY N D	44	NEVZOROV A A	55	PASTERNAK L E	26	POPOV YU M	13, 17, 27, 28, 49
MILYAYEV V A	50, 52, 53	NIKITCHENKO V M	6	PATURYAN S V	25	POPOV YU V	29, 30
MIN'KO V	50	NIKITENKO A I	57	PAVLOV A I	50	POPOVA L L	44
MISHIN V	37, 38, 48	NIKITIN V V	2, 35	PAVLOV V M	17	PORTNOY YE L	3
MITROFANOV A A	61	NIKOLAYCHIK A V	23	PAVLOVSKAYA N G	17	PORTSEL L M	38
MITSA V M	19	NIKOLAYEV V D	23	PAVLYUK A A	2	POTAPOV V T	29
MIZIN V M	56	NIKOLAYEV V A	50	PAZDZERSKIY V A	56	POVROZIN A I	43, 45
MKRITCHYAN A R	25	NIZAMETDINOV M M	54	PCHELKIN V YU	30	POZHAR V V	6
MOGIL'NITSKIY B S	7	NOVAK I V	42	PECHERSKIY YU YA	21	POZHIDAYEV V N	32
MOKHOREVA S I	28	NOVIKOV I K	47	PEKLENOK V D	47	PREDEIN A L	41
MOLCHANOV A G	13, 17	NOVIKOV M A	48	PELEKHATYY V M	31	PRILEZHAYEV D S	5
MOLOCHEV V I	2	NOVORANTSEV I V	10	PEREVOZHCHIKOV N F	11	PRISHIVALKO A P	32
MONCHINSKIY V A	47	NOVOKRESHCHENOV V K	1	PESCHEL C	40, 56	PRIVALOV V YE	45, 60
MOROZOVA V N	27, 28, 35	NOZDRIN V V	51	PESTOV E G	45	PROKHOROV A M	21, 29, 31
MOSKALENKO S A	24	O		PETROV G D	46	PROKHOROV A M	52, 56
MOSTOVNIKOV V A	6, 10, 28	OBRAZTSOV G V	5	PETROV N S	14	PROKOPENKO V A	52
MOZHAROVSKIY A M	1	OCHKIN V N	10	PETROVSKII V N	15	PROKUDIN V S	20, 46
MOZOL' P YE	48	OKHRIMENKO B A	48	PEVGOV V G	43	PROTASOV YU S	5
MUCHIYEV S G	29	OKSHMAN YA A	51, 54	PIKHTIN A N	9, 10, 12	PROTSENKO YE D	16
MUCHNIK G F	44	OLEKSYUK I D	19	PIKULEV A T	20	PUJKOV S D	7, 43
MULLER YAN	7	OLEYNIK YU M	11	PIKULIK L G	28	PURETSKIY A A	53
MURATOV V R	47	OLMKOVNIKOV B F	38	PILINYI A	6	PUSHNYY RV	37, 38
MURINA T M	52, 53	OPASOV V P	40	PILIPPOVICH V A	42	PUSTOVALOV V V	15, 16
MURUGOV V M	38	O		PIMENOV V P	1	PYN'KO V G	59
MURZIN V N	49	ORAYEVSKIY A N	12, 14	PINCHIK V P	12	RAZHEV A M	36
MUSZYNSKI Z	4	ORIENKO E I	44	PINCHUK V P	34	RABINOVICH E M	13
MYAKIN G V	33	ORLOV V K	4, 8	PINCHUKOV V I	9	RADCHENKO V V	40
N		ORZEGOWSKI H	40, 56	PISKARSKAS A S	43	RASIDOBARIN G T	25
OGIBAROV V R		OSIKO V V	20	PISKARSKAS A S	22	RAKHIMOV A T	17
NAGIBINA I M	49	OSTAPCHENKO YE P	37	PIS'MENNY V D	39	RASPOPIN A M	10
MAKHOIKIN N G	60	OVCHANNIKOV N I	39	PITERKIN B D	54	RESHETNYAK S A	47
NAKWAISKI W	36	OVCHANNIKOV V M	41, 54	PLYASHKEVICH L N	39	RASSOKHIN I T	15
NAPARTOVICH A P	4	OVLIKO O G	29	PODGAJETSKIY V M	17	RAYKHMAN B A	48
NARZULLAYEV K N	10	OZOLS A O	51	PODPALYY YE A	51	RAZHEV A M	13
NASTOYASHCHIY A F	2	P		POGOJAYEV V A	32	RAZVIN YU V	1, 19
NASYROV U	58	P		POKORAL	1	REBANE I	2
NAUMENKOV P A	25	PAUCH M		POLIKANIN A M	36	RESHETNYAK S A	11
NAZARENKO M M	10	PAL'YANOV P A	1	POLIVANOV YU N	20, 52	REYND V V	31
NEDAVNIY A P	45	PANCHENKO V YA	31	POLJAKTOV I A	49	RITUS A I	20, 29
NEFED'YEVL A	43	PAN'KIN V G	14, 37	POLYANICHIEV A N	59	ROJIONOV N E	12
		PAN'KIN V G	30	PONOMAREV YA G	3	ROGOZHIN A V	11

ROMANOV N P	34	SEMENOV A V	20, 46	SHVARTS N L	46	STARTSEV V R	24
RODAREV V S		SEMENOV G I	51	SHVEYKIN V I	35	STARUNOV V S	29
ROTARU A KH		SEMENOV O G	51	SIDOROV V A	33	STEBA A M	2
ROZENSTEYN V B	37	SEMENOV V V	37	SILENOK A S	10	STEJSKAL A	44
ROZHDESTVENSAYA N B	33, 51	SEMEYUSHKIN I N		SILIN V P	47	STEL MAKH M F	28, 29
RUBANOV A S	10	SERAY S V		SINIS V P	19	STEL MAKH U M	37
RUBINOV A N	6, 10, 28	SERBA A A	49	SINITSYN A M	9	STEPANOV B I	9
RUDENKO O V	25	SERDYUCHENKO YU N	59	SINYAK V A	51	STEPANOV B M	40
RUDNITSKIY YU P	5	SERDYUKOV V I	21	SIRAZIYEV A I	27	STEPANOV S A	41
RUDOV YU K	30	SEREBRYAKOV V A	5	SISAKYAN YE V	21	STEPANOV S I	33
RUKMAN G I	39	SERGEYEV A B	2, 28, 40	SKACHKOV YU F	7	STEPANOV V M	47
RYABININ A N	33, 51	SERGEYEV V V	8	SKLIZKOV G V	57, 59	STOLYARENKO A V	50
RYCHKOVA YE R	57	SEVAST'YANOV E K	26	SKROBOGATOV G A	38	STOYANOV A K	35
RYKALIN N N	54	SHAKHNAZARYAN N V	25	SKREBSKOV O V	13	STOYAKA I M	19
RYVKIN S M	38	SHALAGIN A M	38	SKRINSKIY A N	35	STRIZHEVSKIY V L	22, 23, 24
S		SHALAYEV M F	22	SKULACHENKO S S	45	STUDENIKIN YU YE	14
SHARKOV V F		SHARKOV V F	12	SLIVKA V YU	4, 52	SUCHKOV A F	8, 9
SHARLAY S F		SHARLAY S F	41	SLIVKOV I N	50	SUKHODOL'SKIY A T	20
SHASHMIN V V		SHASHMIN V V	30	SMIL'GYAVICHYUS V	43	SUKHOV YE G	3
SHCHEGLOV V A	28	SHCHEGLOV V A	12	SMIRNOV A A	27	SURAN V V	47
SHCHEGLOV V B	55	SHCHEGLOV V B	11	SMIRNOV B M	12	SURKOV V I	45
SHCHELEV M YA	24	SHCHELEV M YA	59	SMIRNOV G I	42	SURSKII YOK	17
SHCHELOKOV A N	40	SHCHELOKOV A N	16	SMIRNOV I V	5	SUSHKO V G	22
SHCHEREBAKOV I A	19	SHCHEREBAKOV I A	20	SMIRNOV R V	5	SUS KOV S YU	57
SAMSON A M	50, 53	SHCHEREBAKOV YE A	29, 31	SMIRNOV V N	48	SUSLIKOV L M	4
SAMOKHINA M A	40	SHELEMIN YE B	39	SMIRNOV V V	21, 47	SUSOV A M	2
SAMOYLOV L N		SHEDOPUT D V	52	SMIRNOV YU G	37	SVENTITSKAYA I N	5
SAMSON A M		SHELOPUT T A	52	SMIRNOVA Z A	54	SVETTSOV V V	55
SANINA V A	50, 53	SHELOVANDOVA G N	3	SMIRNYKH V A	60	SVINZINSKIY K K	30
SAPRITSKIY V I	40	SHEPELENKO A A	9	SOBOL' A A	2	SVIRIDOV V V	36
SAPRYKIN E G	42	SHEPEL' L G	52	SOBOLEV N N	10	SVIRKUNOV P N	
SARKISYAN S M	24	SHEREMET' YEV A G	18	SOBOLEVSKIY N M	57	SVITASHEV K K	
SARTCHEV M YE	23	SHEREMET' YEV YU N	38	SOKOLOV A A	34		
SATTAROV D K	28, 30	SHERSTOBITOV V YE	8	SOKOLOV V I	5		
SAUNIN S A	49	SHEVANDIN V S	26	SOKOLOVA Z N	18		
SAVEL' YEV A D	21	SHEVANDIN A YE	12	SOLODOV A M	21, 44	TALZHIEVYEV F N	16
SAVEL' YEV I I	45	SHEREMET' YEV A G	19	SOLOUKHIN A D	33	TAJLYEV Z A	21
SAVEL' YEV V A	61	SHERSTOBITOV V YE	8	SOLOMAKHA D A	40	TALASHEV A A	33
SAVIN F M	28	SHEVANDIN V S	26	SOLOMONOV V I	11	TALENSKIY O N	2
SAVUSHKIN A F	42	SHEYNDLIN A YE	28	SOLOUKHIN R I	41, 60	TANIN L V	10
SAYAKHOV R SH	20	SHIGORIN V D	21	SOLOUKHIN R I	3	TANIN N A	60
SAZONOV V N	26, 49	SHIKANOV A S	59	SOPKO F V	19	TANOS E	42
SEDOV B M	5	SHILOV YU I	54	SOPROKIN YU M	34	TARABROV V V	41
SEFEROV A S	50, 51, 52, 53	SHIPILOV K F	33	SOSKIN M S	15, 20, 27, 36	TARAN M D	12
SELEZNEV V V	19, 35, 39	SHIPITSYN S I	16	SOSKIN M S	15, 20, 27, 36	TARANEV V V F	15
SELEZNEVA L A	11	SHITOVA E V	52	SOKOLOV V I	29	TARASOV M D	17
SELIVANOVA L F	16	SHKVARINA N S	5	SOSNIN V P	22	TATARSKIY V A	5
SEMAK D G	36	SHMAONOV T A	33	STARINIS A YU	3	TATARSKIY V I	34
SEMCHISHEN V A	48	SHOKHUDZHAYEV N	4	STAROV V I	54	TAURE L F	34
SEMENENKO A I	46	SHPAK I V	17	STAFFEYEV V I	59	TEREKHOVA S F	50
SEMENENKO L V	41, 46	SHPAK M I	19, 25, 39	STAMENOV K V	10		
SEMENOV A A	54	SHREYDER YE YA	10	STAPOROV A N	36		
SEMENOV A S	2, 28, 40	SHTAN'KO A YE	36	STARUSTIN A N	10		

TERENT'YEV V	31	VALASHOV I F	2	Y	Y
TESELKIN V	39	VAL'YANSKIY S I	52	YAKOVLENKO S I	26
TESEL'KO V S	33	VARAVA V P	17	YAKOVLEV YU M	29
THIETE G	40, 56	VASHKEVICH I H	14	YAKOVLEV YU M	39
TIKHONCHUK V T	59	VASIL'YEV A A	18	YANISOVA L K	35
TIKHHONOV YE A	6	VASIL'YEV B I	10	YAROSHENKO O I	6
TIMOKHOVICH N V	56	VASIL'YEV L A	4	YAROSLAVSKIY L P	61
TIMUSHEV A G	35	VASIL'YEV V M	13	YASHUMOV I V	28
TOROPOV A K	40	VAS'KOVA V I	33	YASNEVA I A	52
TREGUB D P	29	VAYSEL' V I	36	YAS'KOVA A D	20, 46
TRIEBEL W	26	VELIKHOV YE P	17	YEFREMOV A V	31
TRINCHUK B F	5	VENKIN G V	22	YEGOROV B V	15, 16
TROJANOWSKI W	7	VERBOVETS'KIY A A	36	YEGOROV N P	10
TRON'KO V D	27	VEREYKIN V A	39	YEGOROV V V	38
TROPKIN YE N	42	VEYKO V P	54	YELISEYEV P G	3, 4
TROSHKIN S V	4	VIKTOROV I A	33	YEMEL'YANOVA G M	54
TRUKHIN V F	2, 40	VINETSKIY V L	36	YEMETS A K	53
TRUSHIN S A	9	VINOKUROV V A	52	YERMACHENKO V M	43
TRUSOV V P	12	VLASOV A N	39	YEVTEYEV G V	41
TSERBULYA G G	50	VLASOV N G	36	YEVTIKHIYEV N N	36
TSERKHOVSKIY V A	35	VLASOV V I	36	YEVTYUNIN A I	11
TSIDULKO I H	3	VODOTYKA G S	6	YUDIN I I	45
TSIKIN B G	24	VOKHMIN P A	11	YUZAPAVICHYUS A S	22
TSITROVSKIY V V	19	VOLCHENOK V I	10	YURCHEV V V	29, 30
TSUKERMAN V A	17	VOLKOV L A	52	YURCHUK E F	46
TSVETAYEV S K	54	VOLKOV N B	47	Z	
TSVYK R SH	31	VOLKOV YU K	34		
TUCHIN V V	7, 40, 41	VOLKOVITS'KIY O A	32	ZAKHAROVENKO I V	48
TUMANOV A V	5	VOLOBUTEV I V	59	ZAKHAROVENKO Y A	59
TUMANNOVA I V	35	VOLODIN YE B	30	ZAKHAROV V M	61
TURIYANITSA I D	19	VOROB'YEV P A	56	ZAKHAROVA YE I	60
TUZOV V G	48	VOROB'YEV V S	12	ZALETAEV S P	34
TUSHKEVICH B N	1, 19	VOROB'YEV V V	42	ZAMYATINA N A	36
U		VOROB'YEV YU S	30	ZAMADYOROV N P	5
VORON'KO V K	2	VORON'KO V K	17, 26	ZAPESOCHNYI I P	47
UGLOV A A	54	VOTINOV M P	54	ZAPOROZHETS T YE	36
UGNIJEWSKI S	46	VOYTIK M G	13, 17	ZARETSKIY A A	28
UKOLOV A I	60	VOYTOVICH A P	46	ZASKAL'KO O P	24
UL MASRAYEV B SH	55	VYSOTSKIY V I	26	ZASTROGIN YU F	42, 46
UMANSKIY S YA	37			ZAVOROTNYI V U	34
URBANIAK A	46			ZBOROVSKIY A A	32
UREVICH I H	1, 6	WERESZCZYNSKI Z	1, 57	ZEMSKOV G G	61
URIN B M	9	WIEMER A	40, 56	ZELIKOVICH I S	37
URLIN V D	23	WILHELMI B	26	ZHIDOVINOV A M	44
V		WOLOWSKI J	57	ZHILIN YU V	12
VAGNER YE T	61	WORYNA E	57	ZHIRYAKOV B M	20
VAKHITANDVA L P	36	WROZ T	52	ZHMUDISKIY A Z	22
				ZHUKOV A A	53